GENETIC PSYCHOLOGY MONOGRAPHS

Child Behavior, Animal Behavior, and Comparative Psychology

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University of London

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INTERPRETATION OF SPONTANEOUS DRAWINGS AND PAINTINGS*[1]

Department of Psychology, Sarah Lawrence College

TRUDE S. WAEHNER

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[1] Illustrated by an experiment with students at Sarah Lawrence College, Bronxville, New York.

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TRUDE S. WAEHNER

31 Park Terrace West
New York City

I. THE PROBLEM

The first approach to interpretation of drawings and paintings was an attempt to interpret the most obvious thing, namely their *ideational content*. Art historians and writers on aesthetics of former times started in this way, as well as psychologists in more recent times (18).

Psychoanalysis occasionally refers to the relation between artistic production of an individual and his emotions. Freud's (8) theory of symbols is an attempt to show connections between certain *object*-images and their affective content. There is more emphasis on the content of the object, e.g., the "what" (a house as a symbol for mother for instance) than on its specific form, e.g., the "how." Sophie Morgenstern (15) and others have shown that the content of children's drawings can be psychoanalytically interpreted like any other association or reaction of the child in a rather successful way, when checked within the course and by the technique of psychoanalytic procedure and proved by its results. Where there is no possibility of control of an associative interpretation through thorough individual procedure, interpretations of content can be considered as significant for the interpreter's phantasy rather than for the individual's psyche. Since the interpretation of the content of drawings within the psychoanalytic process has proved valuable, the literary content has to be considered as something similar to the manifest dream content and is subject to displacements and disguises which occasionally may be disentangled by the psychoanalytic procedure.

Similar contents can be found in the spontaneous drawings of individuals with different structures of personality, normal as well as mentally sick. A frequent or stereotyped repetition of the same content in a sequence of free drawings extended over a long period will usually have a meaning significant for the individual. On the other hand, the same content, epidemic in a group at certain times, like Christmas trees for instance, are represented in different forms by different individuals. Consistent preference for certain forms of representation and avoidance of others were sometimes very pronounced in different individuals or in different mental stages of one individual. It seemed worthwhile therefore to experiment and see how far it would be possible to use the formal aspects of drawings as an objective material and where the limits of objective interpretation of drawings are.

A number of longitudinal and group-experiments showed that the feebleminded, neurotic, and especially the mentally ill individuals tend to exaggerations in form and color which seemed to be also significant for the normal individual, but which the normal individual does not show to such a degree. This was shown clearly in a study of cases of whom a diagnosis was given by psychiatrists and on whom longitudinal studies as to "form-attitudes" were made, and long case-histories were available. It was possible to establish certain trends common to certain diagnostic groups which are described by the author in *Formal Criteria of Children's Drawings and Paintings* (22).

The next step was to study more systematically children of pre-school age and adolescents, and to try a blind diagnosis based on no personal knowledge of the child, but only on the drawings. Such experiments were carried out by the author with college students and with nursery school children in Sarah Lawrence College. The experiment with nursery school children was done as part of a larger study of personality development financed by the Josiah Macy, Jr., Foundation and carried out by L. B. Murphy (17), E. Lerner, and collaborators. Free drawings and paintings by the same nursery school children had been collected for two, and in some cases for three years in chronological order. Intensive and extensive regular reports of psychologically very well trained nursery school teachers and of psychologists were available for comparison as psychological tests like the Rorschach (20) and others. Blind statements about the children based on the analysis of drawings and paintings were matched by the teachers and psychologists who knew the children. The matching was successful to a high degree, that is, the children were recognized from personality descriptions. Four matchers out of five recognized all the children and the fifth was 80 per cent correct in her matching. The matchers agreed with 85 per cent of the single specific statements, disagreed with not quite 4 per cent, and were neutral in regard to 11 per cent. This material will be published in a case-study book edited by L. B. Murphy, where the children are described also as seen through other techniques.

In another study the attempt was made to grasp some cultural aspects of the problem by examining drawings by children of primitive peoples which had been collected by an anthropologist. A blind analysis was attempted of the characteristic traits of a primitive tribe in Alor, N. E. I., for Dr. Cora Dubois who had studied these peoples for one and one-half years and had also given them Rorschach tests; the results of the drawing analysis matched to a high degree with the findings of the anthropologist and the Rorschach analysis of Dr. Oberholzer. This analysis can be found in the book *The People of Alor* by Dr. Cora Dubois (4).

II. THE EXPERIMENT

This paper will be mainly concerned with some results of the experiment carried out with college students at Sarah Lawrence College and with the method of interpretation. The students were freshmen and sophomores between 17 and 19 years of age. Fifty-five students, all of them coming from psychology classes, underwent this experiment in small groups of five to six experimentees. Since over half of the freshmen and sophomores at Sarah Lawrence College take psychology, this restriction probably did not materially affect the sampling of students. Each student was seated at an easel in such a way that she was not able to see from her place what her neighbor painted or drew unless she got up and stepped over to her neighbor's place. If this occurred it was noted and considered in the evaluation. The students did not have the feeling that they were forbidden to look at their neighbor's picture but had little occasion. No student was influenced by aesthetic suggestions or evaluations.

The procedure was slightly different from that followed in the studies of the nursery school children and children in the latency period. In addition to free drawings and paintings some productions were studied which had been made in response to certain assigned tasks. Each student was asked to make: *first* a series of "free" drawings or paintings, having a free selection of different kinds of material[1] as well as free choice of theme; *second* a series of human faces in the following order: (*a*) any human face she liked; (*b*) an ugly and a beautiful face; and (*c*) a self-portrait by heart without a mirror; *third* a group of human figures.

Four hundred and twenty-two pictures obtained through the above described process were analyzed and scored in chronological sequence according to choice of content as well as preference for certain types of formal expression such as size of paper, proportions of sides, size of form-elements, choice and avoidance of colors, distribution of form-elements, quality of lines, movement elements, organization of form, perspective, shading and others.

Individual reactions of each student were compared with the average reactions of the group and with findings in other longitudinal and group studies. From these data a tentative descriptive personality sketch on each student was formulated. The personality descriptions were given in sets of four, five, or six to teachers, to the psychologist Dr. L. B. Murphy and to the Rorschach expert Dr. Ruth Munroe (16) for matching, analysis, and discussion. In this process of matching 14 students could not be matched by all their teachers for technical reasons (absence of teacher or the like). One hundred and sixteen matching judgments from teachers were received on 41 students. In one hundred and three cases the teachers recognized the students, and in 13 cases referring to 13 students they did not. The agreement arrived at in individual statements was extremely high. The matching with the Rorschach interpretations was 87 per cent.

---

[1] The material consisted of large rolls of paper from which the student could cut pieces in any size and proportion she wanted. On a low stool was a set of hard and soft pencils, an eraser, thick and thin charcoal; red, blue, yellow, black, and white paint, water, and thick and thin brushes.

The agreement with the Rorschach is particularly interesting in that regard that four cases where the teachers disagreed with Dr. Munroe's descriptions and also with mine, Dr. Munroe and I had a strong agreement in our descriptions. A personal discussion of these students with the teacher seemed to be particularly fruitful for the understanding of the student, since the test methods revealed underlying character traits that were masked in the social situations in which teachers usually see students.

For Dr. Munroe and myself the confirmation by another test of statements considered inaccurate by teachers seemed to be particularly valuable from a scientific point of view in throwing light on certain problems of the method. We can see clearly that there are frequently personality tendencies which do not come to the surface and are not easily understood in daily life, but which are nevertheless present and effective in a personality and which are revealed by both of these projective methods, Rorschach test and my experiments. On the other hand, it seems possible that tests using primarily visual materials, genuinely fail of their mark in some types of personality, e.g., a student, who according to the scoring in my experiment as well as in the Rorschach test was classified as a rather "disturbed" personality, whereas according to her college advisor and teachers and the more or less superficial knowledge of her personal history and background, she functioned as an adjusted individual. By the Student Work Committee, however, she was rated *S* (*p*), i.e., satisfactory academic success, but personality difficulties.

Furthermore, I finally attempted on suggestion of Dr. Munroe (6) to establish a rating scale in regard to general adjustment. I did this with much reluctance as up to now I could not find a definition of general adjustment which satisfied me. I could think of adjustment only as to a specific environment. Whenever we talk of adjustment, it seems questionable whether we can use this concept without reference to an environment or to other factors *to which* a person is adjusted. However, it has become usage to speak of adjustment as such. When we analyze what people mean by adjustment, we realize that in most instances adjustment in two directions is implied. At large we call a person adjusted who has a minimum of difficulties in his dealings with people of his environment and who does not have friction within himself which would impair his ability to work and to enjoy life. A psychiatrist or psychoanalist will try to help his patient make a full adjustment in both areas. Where we do not deal with psychiatry, we think that main emphasis has to be put on adjustment to one's environment and that we may make allowance for some inner friction as long as it does not become too obvious. There is a coincidence of this concept of adjustment with what we may call plasticity. Some people have a relatively unlimited choice in all or many areas of life. We may assume that they use this ability to chose to their greatest advantage. Others do not have much chance to chose. Whenever they come face to face with a problem that is not within their reach, they experience frustration. The ones might be called adjustable, the other ones not. In the main this is reflected in the greater or smaller variety of form attitudes in drawing and painting. My rating scale applies, therefore, more to general plasticity than to adjustment, or perhaps what could be called adjustment capacities. Besides that I thought my method was not and possibly could never be quantitatively so developed that a rating scale would be reliable. However, I tried the experiment. The results proved a far-reaching agreement on the use of the adjustment-plasticity ratings and on further consequence the practical usefulness of this rating procedure.

Experience had shown me that certain form attitudes occurred in the sequences of certain types of personality with certain trends in certain developmental stages more frequently than in others. Certain form elements or configurations seemed to have in certain regards a positive or negative meaning. I therefore studied the sequences of all students in regard to quantitatively striking deviations of form attitudes from the average reaction of the whole group and weighted each favorable and each unfavorable deviation. In Table 14 we find the averages of form attitudes of the whole group. In Table 15 can be seen the percentages of adjusted students as well as unadjusted students, in whose sequences significant deviations from the average were found.

According to the number and quality of checked deviations I placed the students in groups which I rated *A, B, C, D, E,* and *B-E** (*"A"* indicating the highest adjustability *"E"* the lowest, and *"B-E*"* meaning generally adjustable but in a particular direction a problem).

The rating scale of 38 students was matched with Dr. Munroe's adjustment-rating scale based on her Rorschach Inspection Diagnosis (6). My comparison of general plasticity with Dr. Munroe's general adjustment showed that, out of 38 classes, disagreement appeared in only eight instances. Of these eight four probably can be accounted for by a difference in standards. Dr. Munroe had starred her low rating to indicate good external adjustment whereas I rated the girls higher with a star to indicate the existence of a special type of problem. In one case the possibility of real improvement in the girl during the year intervening between the Rorschach and my experiment may account for the disagreement. In three cases there was discrepancy of slightly over one point on the rating scale. Dr. Munroe took a somewhat graver view of two girls than I and rated one girl more favorably. In no case was there a major difference in evaluation of the degree of disturbance. In seven cases discrepancies of the following nature were shown with the Rorschach interpretations: In one case the Rorschach interpretation said that the student's rigidity was more superficially applied. Another student's Rorschach seemed to be better than my description. The girl had, however, obvious difficulties in the college. In a third case the Rorschach description conceived her creative capacity not as deep going and introversive and emphasized strongly the possibility of a narcissistic disturbance, which I, however, had indicated, but more mildly. This case will be discussed in the course of the paper. In the other cases the discrepancy was more a question of emphasis.

These discrepancies show clearly how important it is to have in a certain number of cases evidences from different angles and methods. I will describe the way in which I arrived at the possibility of interpreting "form attitudes."

There was, of course, to be considered the probability of the students being influenced by previous practice in art or simultaneous art training and outside stimulations, fashion, and imitation. Other experiments had justified the assumption that certain dispositions, reflected in form-attitudes, are so strong that they cannot be easily influenced by intellectual learning and are therefore rather indicative for a personality; but it is hard to define to what degree art-training or lack of drawing ability could be accounted for certain form-attitudes. It was decided to score and interpret the pictures of all students alike, according to the same method, without considering art-training or lack of drawing ability in the single interpretations, and at the end to compare the performances of students with special artistic background or "disability" with the average. Therefore a careful inquiry was made as to the previous and present art activity of the students who participated in the experiment.

Among the 55 students 37 remembered with certainty that they painted or drew when they were little children, 8 could not remember, and the remaining 10 thought that they did never paint or draw. Twenty-seven did not have any art-training and had not painted or drawn since they were little children. Twenty-eight had had art training the year before this experiment took place (16 of them at Sarah Lawrence and 12 of them at art schools, art colleges, private art courses, and at regular schools). Of these 28 students, 20 had stopped attending visual art courses, so that only eight remained who attended art courses in the college at the time when the experiment took place. In addition to these eight students, three of the 27 who supposedly had had no art training before at all, became interested in art, so that on the whole 11 girls attended art class. Seven of these considered art as their main interest. Of the 20 students who had given up their art courses, 11 said in their questionnaire that they were still interested in art and were drawing or painting by themselves.

In the interpretations of students with art training obviously the same results were achieved as in those of students without it. The mistakes in matching were equally distributed over both groups. The greatest disagreement was the description of a girl without art training. It can therefore be assumed that, with some exceptions to be discussed later, the criteria which are used in this method are to a high degree independent of art-training (or at least of the kind of art-training these girls had had) and reflect deeper rooted attitudes than "fashion" of painting. In case an influence should result in change of form-attitudes, the probability is great that through the transference to the teacher or through the particular meaningfulness of the form-symbol, or both, a psychic process takes place which results not only in a change of form attitudes, but also in developing a probably latent psychic disposition.

III. THE METHOD

Objective definitions of the "form-elements" had to be established, according to which the pictures were to be analyzed in a consistent way. A picture is a totality and cannot be considered as a sum of single form-elements and the form of representation is frequently not entirely independent of the content. The separation of single form-elements seems, therefore, to be rather arbitrary and artificial. The idea was to try such a separation nevertheless, and to see which of these form-elements would be meaningful and usable, which ones would have to be eliminated, and when they would have to be considered in configuration with others. The basic hypothesis is that there is a relation between artistically created forms and an individual's concept of his body, an idea expressed by Josef Frank in his book *Architecture as Symbol* (6). Paul Schilder (21) and Lauretta Bender have shown the psychological implications of perceptions.

An individual's concept of his own body and his relations to the sensual world is built up by his instinctual dispositions and his desire and capacity to control them (14, 23). The first attempts of the infant at form creation are movements of his own body. If the child wants to laugh or cry he has to give his throat a definite form. The same thing takes place with grasping and all other bodily movements. The form of his expression will be defined by the proportion of pleasurable to unpleasurable controlling associations. It is clear that pleasurable and unpleasurable experiences will teach the child to evaluate the relation of objects of the outside world to his own ego, which is first a relation to his body. This evaluation also influences the development of his visual perception. A process of symbolization goes on: certain forms perceived or transformed in movement or both become symbolic for every normal child; other forms will become symbolic only for one particular individual; or forms which are symbolic to a certain degree for every child will be strongly over-symbolized by one child. The proportion of dispositions to controlling forces is effective in an individual's tendency to symbolize perceptions, in his lack of capacity to symbolize, and in his tendencies to over-symbolization of experiences. The study on nursery school children mentioned above showed how far this is reflected already in the drawings of very small children.

Working on this hypothesis a series of form-elements were defined. These more or less subjective, intuitive formulations were compared with those of others, for the purpose of finding such formulations which could build an intrasubjectively common basis of criteria. A series of plates offering examples of different manners of representation was shown to 20 subjects, consisting of artists, psychologists, and lay-persons who could be considered as intelligent well functioning personalities. The preferences and dislikes of these 20 subjects were scored and they were asked for their definitions, e.g., what they called a vital color scale or distribution, and so on. After this process these form-elements were eliminated, if no agreement could be achieved in regard to formulating a definition.

Second, a series of pictures were scored by different people and then again we eliminated those form-elements which presented the greatest difficulties in scoring and where no agreement could be achieved. This procedure was not carried through with all the criteria in all the finest details, but some of them which had worked in interpretations were kept as tentative. The items finally used for scoring are shown in Table *A*.

TABLE *A*

SCORED ITEMS

(The number on the left refers to the item-number on the scoring sheet; see page 64.)

---

(1) *Number of pictures in each sequence*

Interesting are only the extremes above and below the average, which is 5-9 pictures in one sequence.

(2) *Contents*

conventional
infantile
queer
exciting
depressing
symbolisms
different isolated contents unrelated to each other within one picture
sketches
human figures, human faces
animals
abstractions
scenes
illustrations of particular stories
cartoons
grotesques
and others

(3) *Size of each picture*

l: large; *m*: medium; *s*: small, definition of *m*: between sizes of ordinary notebook ($8\frac{1}{2}$ x 11 inches) and ordinary drawing pad (14 x 21 inches).

(4) *Format and relation to format*

□: square
Conventional: rectangles with sides in approximate proportion of 2:3 or 3.4.
▭ ▯ Unusual oblong format with one side at least 3 times longer than the other side.

All other formats very unusual.
Ma: format is filled up to margin.

TABLE *A* (*continued*)

Di: forms painted or drawn are kept in distance from margin.
Di Ma
Ma Di } Mixture of both.
Ng: the margin is neglected.
Ng-Ma
Ng-Di } Forms are expanding over the margin, paper seems too small for the intended concept; unintentionally cut off forms. Or, in rarer cases, forms are too small and placed in one corner, rest of page not used.

(5) *Size of form elements*

l fe: form elements large in relation to whole.
m fe: form elements medium in relation to whole.
s fe: form elements small in relation to whole.
l, m, s: variety of different sizes.
l, m: large and medium form elements.
m, s: medium and small form elements.
l, s: large and small form elements.

(6, 7) *Curves and edges*

Edges+: many edges.
Curves+: many curves.
Curves > edges: more curved forms than edges.
Edges > curves: more edges than curved forms.
Edges: sharp, short scattered strokes.

(8) *Vivid details in line*

Spontaneous vivid details in the *form of outline as well as in pressure of line* (plus, plus minus, minus plus). The occurrence of vivid details is not very frequent and can be called an *original* element. It is also a form element which I call a *secondary movement element*, together with *vivid distribution* of form elements, *many* curves and *differentiated rhythm*. These elements are the movement elements which pre-suppose the capacity of making a human figure in movement. They occur as movement elements in pictures by children who are not yet able to draw human figures.

(9, 12) *Distribution of form elements*

v: vivid distribution (form elements being distributed in relation to diagonal axis).
r: rigid distribution according to horizontal or vertical axis.
c: form elements grouped around or in center.
cf: centrifugal distribution.
(*c*): when head or face.
EE: emphasis on the top respectively, on the bottom of a picture (very rare).
sc: scattered, disorganized distribution.
sym: symmetry.
(*sym*): symmetrical head or face.

(10, 11, 13) *Movement elements*

H: human figures.
H+: human figures in movement.
H—: stiff human figures.
A: animals
A+: animals in movement.
A—: stiff animals.
SM: secondary movement elements

TABLE *A* (*continued*)

(*a*) positive: vivid details in line, see (8)
curves
vivid distribution, see (9)
differentiated rhythm, see below
(*b*) negative: symmetry, see (12), see below
rigid distribution, see (9)
rigid uniform rhythm, see below

diff.rh.: Repetition of similar but *slightly varying* forms within one picture, in similar but slightly varying sizes, distances and directions.
r.un.rh.: stereotyped repetition of same forms in same sizes, distances and directions.

(14, 18) *Form*

F sh: sharp form.
F cl: clear form.
F m: medium form.
F vg: vague form.
F r(+, —): realistic form (adequate to represented object).
F exp: expressionistic forms (exaggeration of essential parts of represented objects).

(15) *Details of form*

d: detail of form.
dd: minutious detail.
$\underline{d}$: essential detail.
$\overline{dd}$: unrelated details, scribblings.

(16) *Continuity of whole*

U+: similar proportions between parts and whole of picture, including spaces between drawn and painted forms.
U: similar relations between parts and whole excluding spaces between drawn forms.
U—: no relations between parts and whole.

(17) *Organization of content*

it: intentional.
ip: content interpreted after picture was painted or drawn; this "*ip*" is usually only occurring in pictures of very small children, in preschool age, in a stage when they play with forms and interpret a spot afterwards, *f.i.* as "sun" or "house." When occurring in the sequences of adults it is usually a symbolism and has to be scored as such.

(22) *Colors.*

C: color.
+: for each color is scored: plus.
± or ∓: when color is little used.
When color is used in different shade, put + for each shade. In regard to color *variety* the ± and ∓ counts as much as +; in regard to color *scale* the ± and ∓ count less than +.
p: pale.
dk: dark.
v: vivid.
$+'$: in the column "spots" means color shading.
Predominance and avoidance of single colors are scored.

(23) *Variety of form elements*

Cv: *Fv*: relation of color variety to form variety.

TABLE *A* (*continued*)

(21) *Quality of line* (*Pressure*)

e: energetic.
l: loose.
r: rigid.
c: contours.
w: weak.
i: interrupted.
Put scoring in brackets when painted over the pencil line.

(28) *Perspective*

P+, *P*—: linear perspective.
P': shading.

(24)

Copying, changing of concepts, destroying of picture, frequent erasing are to be considered.

Finally one had to find out to what types and properties of individuals certain attitudes could be coördinated or not, for establishing a method of interpretation. In discussing the single criteria of the method I will present some results of the experiment done with students in Sarah Lawrence College. For comparison we used the American Council Test (*ACE*), which gives a notion of the students' intelligence, the descriptions of students by teachers, and the rating of the Student Work Committee, evaluating the academic success of the student. The latter used three ratings: *M* for superior academic success, *S* for satisfactory academic success, *Q* for unsatisfactory academic success. To indicate the adjustment rating of the students here I used not my original but a corrected rating scale; that is, I kept all my ratings which were in agreement with Dr. Munroe's inspection diagnosis rating scale and which were not in contradiction with the majority of the teachers' reports. In the few instances in which Dr. Munroe and I disagreed, I considered the opinion of the teachers and kept either my or Dr. Munroe's rating depending on which side the majority of the teachers' judgments was. May I refer here to Dr. Munroe's evaluation of my method in the delayed September issue of *Character and Personality* (16).

A. THE NUMBER OF PICTURES

All students were working during the full six hours, and in that way it was possible to regard the number of pictures of the whole sequence of one student as an equivalent for the student's tempo and to compare it with the average speed of the group and with the qualitative production. The greatest part of the students (73 per cent) made 6-9 pictures in the given time. Among those can be found all types with adjustment rating between *A* and *E*, with different qualitative configurations. However, comparing the six slowest students (with three to five pictures) with the eight quickest (10 to 20 pictures) we find no *A* and *B* girl among the slow, but four *A* and *B* students among the quick. The scoring syndrome of the unadjusted group (*D*, *E*) compared with the scoring syndrome of the adjusted group (*A*, *B*) shows that 4.5 per cent of the adjusted students are slow and 27 per cent quick in drawing, whereas 18 per cent of the unadjusted are slow and 6 per cent of the unadjusted are quick. The one student who succeeded in making only three pictures has a low adjustment rating. Of course, every student knew that there would be only three sessions and that the experiment was not an art class with the possibility to work for several months or a year on one picture. The idea was from the beginning a kind of sketching.

There were comparatively many girls who knew how to do the essential immediately and in a good way, or perhaps it is vice versa, that because they know, they can be quick. But there are also those who are quick because they are flighty and superficial. There are types where slowness is correlated to their inhibition, but it is evident that in the great majority of cases no reliable correlation can be found to speed of function. In checking the specific character trends of the students no common features could be correlated, except that the pictures with the most favorable scoring configurations were found in sequences with a medium number of pictures (between six and nine).

B. SIZE (10)

Small sizes are more significant for reduced energy than are large ones for increased energy or aggression (13). Large and middle sizes are more natural on the average, large sizes particularly for small children. Preference for large sizes is decreasing with increasing age, for older ages preference for large sizes is not so usual. Most of the depressive anxious children prefer small sizes as was shown in the paper on children in latency period mentioned above. On the whole we find in the sequences of normal individuals a variety of different sizes.

Seventy-four per cent of the students in Sarah Lawrence College used a variety of different sizes, 17 per cent used only small sizes throughout their whole sequence, 4 per cent used medium sizes, and 5 per cent showed a marked preference for large sizes so far that in each of their sequences only one picture was small, none medium sized, and all the others large. One of these students (adjustment rating *D*) worked in particularly large sizes and used the largest, a really tremendous one, for her self-portrait in over life size. This student was described by her psychology teacher as being

TABLE I

	Adjustment			Intelligence			Academic Success		
Speed—Size—Format Size of Formel	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE < 30	Percentage of stud. with ST.W.C.R. *M*	Percentage of stud. with ST.W.C.R. *S*	Percentage of stud. with ST.W.C.R. *Q*
Quick (over 9 pictures) Somewhat more likely to be adjusted	13	27	6						
Slow (under 6 pictures) Somewhat more likely to be unadjusted	12	4.3	18						
100% preference for small sizes Reduced energy, anx., careful, depressive	17								
Unusual formats Superior originality, or queer, depending on configuration, schiz. type	20	dep'g on configurat.					14	17	23
Several *Ng* (over 2 *Ng*) *1 Ng not significant* Unadjusted, sloppy, lack of control	7	0	12						
80-100 Di High control; likely to be unadjusted, but sup. academic success	14	0	29				79	17	6
Many Ma Probably ambition, initiative, very favorable	9	22	0				14	13	0
Preference for small form elements Constriction, inhibition, anxiety; unadj., acad. satisfact. but not sup.	7	0	6				14	4	12
Many (over 30%) l, m, s form elements Flexibility, adjustment, very favorable	30	18	0				10	13	6

particularly aggressive and stubborn, a not too well adjusted individual who gave herself an air of high self-estimation without much justification. She was the only one in the group who used for a decorative design a swastica. The other student who used large sizes was also rated only *D,* but described as not overtly aggressive. Large size is not necessarily indicative of aggression. The ratings of the students with 100 per cent of their sequence small sizes are less good than those of the students who used at least one medium size. Most of them were described as anxious, shy, constricted, or highly self-controlled. A preference of 100 per cent small sizes is rather indicative of constriction, reduced aggression or anxiousness, but not indicative of adjustment or maladjustment. It occurs in the scoring syndromes of the adjusted group as well as in that of the unadjusted with not very high but about equal percentage (12 per cent unadjusted, 13 per cent adjusted). There is no correlation between size and intelligence.

C. THE FORMAT

The next criterion is the shape of the paper with its proportion of sides. The rectangles which are usual for school pads were called *conventional,* and those very much longer (more than 2:1) than wide or such with complicated queer forms, like cut out hearts or rings with symbolistic meaning, were called *unusual.*

The unusual format is apt to be more meaningful as well for the person who is superior in thinking and above the group average as for those for whom it is too difficult to share or grasp the concepts of the group. Most of the paintings and drawings were indeed carried out in the conventional formats. The unusual formats were not used frequently and when used occurred only once or twice in a sequence with the exception of one rather disturbed girl. On the whole there were 20 per cent who used the oblong horizontal format, half of them girls with the star rating, that is partly brilliant partly disturbed. One was a psychosis borderline case. They were described as trying to be "apart," or as unconventional, one as "queer." This seems to fit in what was said about the extraordinary meaningfulness of these formats. In the study on children in latency period this format occurred frequently in the schizophrenic group.

However, in comparing the scoring syndrome of the adjusted student with that of the unadjusted students this form element appears in both groups with about equal percentages and cannot be called indicative as an isolated element. Yet in configuration with many other elements negative in regard to adjustment it proved to have an unfavorable meaning, whereas in configuration with many positive factors in this regard it represented a favorable factor in the direction of originality (if it was not a particularly complicated or queer form with symbolistic meaning, symptomatic of the schizophrenic). No sequence with more than one or two unusual oblong formats occurred among students with superior academic success. The greater part of their sequence showed conventional formats.

D. The Relation of Form Elements to the Format

Measuring up the space of paper well, distancing the form elements within the picture in relation to the whole, presupposes some power of organization and sense for proportion as well as a certain balance between freedom and discipline. Anxiety and overcontrol is frequently effective in that direction that the form-elements in the picture are comparatively small in relation to the whole format or altogether kept in great distance from the margin; or that lack of control leads to neglecting of the margin in form of painting or drawing over it in an expansive way.

The great majority of sequences of the students show a variety of manners in this regard: pictures which are "filled" to the margin (signified in the scoring by the symbol *Ma*), pictures where the forms are kept in distinct distance from the margin (*Di*), and pictures which are in between these two manners (*MaDi* or *DiMa*). In a minority of cases the sequences showed *one* picture in which the margin was neglected (*Ng*). The students who showed one *Ng* in their sequence were all adjusted girls who were rated *A* or *B*, one was rated *C*. In four other cases, however, the sequence showed several (two to five) pictures with *Ng* and three of these four girls were rated rather low in adjustment (*C*, *D-E*, *D-E*, *E*). These girls had also medium and low intelligence scores, none above 60 *ACE*. Furthermore there were eight girls whose sequence showed a consistent tendency to keep in distance from the margin (*Di*) in all their pictures (90-100 per cent). All these students were described by the Rorschach test and by the teachers' records as highly self-controlled but maladjusted and very constricted personalities. Only one student, without any art training, showed a sequence with 100 per cent of the pictures adequately filled to the margin. This student was described as an outstanding personality, with great gifts for organization, initiative, and ambition, perfectly adjusted and with superior academic success. This *Ma* is more frequent in sequences of children, who find it easier to fill the space and who are less ambitious as to quality of other form-elements. There is no correlation between *Ma* or *Di* and *ACE* ratings. Twenty-two per cent of the adjusted students show a majority of *Ma* in their sequences and zero per cent of the adjusted group. Twenty-nine per cent of the unadjusted show a majority of *Di* and zero per cent of the adjusted. On the other hand *Di* appears in a rather high percentage of the students with academic success, whereas it occurs extremely rarely among those with academic failure. *Di* seems to be indicative of a particular kind of overcontrol, which is unfavorable for adjustment, but favorable for academic success. A tendency to overemphasize the frame, to make separate frames within the frame occurs in constricted personalities, sometimes and more frequently in personalities with infantilistic trends and in states of confusion.

E. Size of Form Elements

Most frequently the sequence of the students showed a mixture of large, medium, and small form elements. Only four girls showed sequences with a majority of small form elements and few or no large ones. These were all students who were described as constricted, very inhibited, three of them as disturbed. A whole sequence with 100 per cent of the pictures preference for small form elements is very rare, does not occur in the adjusted group, and even in only small percentages of the unadjusted group. It is characteristic of depressive states and was found in compulsory neurotic children. On the other hand this phenomenon occurs sometimes in the group with satisfactory academic success in constricted types, but not among students with academic failure and not among those with superior academic success. Six most adjusted superior girls used a mixture of *l, m, s* form-elements and in addition an emphasis on large ones. Only one sequence of a disturbed girl with little flexibility and great amount of anxiety showed large form-elements alone without any medium sized or small forms.

F. Distribution

If we look at a *symmetrical* arrangement, a comparison with the axis of our own body is effective. The middle axis, even when it is not drawn, has an overimportant effectiveness, it makes an impression of constraint. Indeed symmetry is used in art works which have ceremonial purposes and serve rites of fixed traditions. Symmetrical arrangement reflects one of the more stereotyped concepts of the body. The more complicated *vivid distribution* indicates a freer imagination and sublimer relation to the body. A particular preoccupation with the body, as it is the case with hypochondriac and depressive people, may be expressed in a preference for symmetry (particularly with emphasized middle axis) as well as it may be explained by

TABLE 2

	Adjustment			Intelligence			Academic Success		
Distribution	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE < 30	Percentage of stud. with ST.W.C.R. *M*	Percentage of stud. with ST.W.C.R. *S*	Percentage of stud. with ST.W.C.R. *Q*
Vivid, over 50% Adjusted; creative element; also schizoid types	30			50	37.5	12.5			
Center High % unadjusted; more likely acad. failure; depressive; ego-centric, immature; occupied with a problem	36	18	59				28	37	41
Rigid Compulsory, constricted, more likely unadjusted and academic failure, though also superior academic success possible	20	18	29				14	12	29
Sym. Conv.; depressive, constricted	54	27	35				29	33	12
Scatt. Confused, disorganized, disturb.	3.6	0	6						
Wide, over 1 picture Not evenly controlled, perhaps relax. mood	12						29	13	12
Narrow Constriction, repression, depr.	15	9	41				0	21	12

conventionality. The human body is externally symmetrical, but internally not (an idea which Josef Frank had mentioned in connection with symmetrical buildings). The human body is also externally only symmetrical as long as it is not in movement. As soon as the body moves, it becomes asymmetrical and of course more difficult to balance. The livelier imagination is, the less it is fixed on a rigid conception of the body, that is on an oversymbolization of the vertical or horizontal axis, as it is expressed in *rigid distribution.*

Distribution was called rigid when all the forms were arranged according to one direction, a horizontal or (more rarely) a vertical one.

Vivid distribution was called an asymmetrical arrangement of forms according to a slanting axis. This was most agreeable when balanced diagonally.

Arrangement was called symmetrical when the most important form elements in the picture were symmetrically arranged, that is when three of the following conditions were fulfilled: when the repeated form elements on each side of the middle axis were (*a*) equally or approximately equally shaped, (*b*) of approximately equal distance from the middle axis, (*c*) of approximately the same dimension, (*d*) of the same size, (*e*) of the same color. The approximately equal distance from the middle axis is the most essential condition for symmetry and cannot be eliminated.

The girls who used symmetry in their paintings and drawings were in general those described as constrictive, depressive, or highly conventional. In regard to adjustment symmetry is not very indicative, it occurs in the scoring syndromes of both the adjusted and the unadjusted group more frequently than other form elements, somewhat more frequently among the unadjusted (27 per cent adjusted, 35 per cent unadjusted). It occurs with similar percentages in the groups with superior and satisfactory academic success and more rarely in the group with academic failure (11.8 per cent). Symmetry is rarely achieved by the feebleminded.

The ratings of the girls with a high percentage of vivid distribution in their sequence, fall decidedly in two parts; the great majority have a good rating and the other part are brilliant girls with a severe problem. In the study on children in latency period this criterion was frequent not only in the drawings of the gifted normal but also in the drawings of the productive schizophrenic children. It does not seem too far-fetched that these girls belonging to the starred group are likely to have schizoid character dispositions. One of these girls was the student mentioned earlier who was described in the Rorschach as a psychosis borderline case.

Ten students showed their sequence more than one picture with rigid distribution. These are mostly described as compulsive, constricted, very controlled, tense, inflexible, except one who has no self control but is disturbed. No rigid distribution at all showed nine girls of the group superior in adjustment, eight of the group with medium adjustment (*C*), and five of the brilliant girls with severe problems, that is altogether 40 per cent of all students. Sequences with very high percentages of rigid distribution appear in 18 per cent of the adjusted and in 59 per cent of the unadjusted, with 14 per cent in the group with superior academic success, with 12 per cent in the group with satisfactory academic success, but to a higher degree (29 per cent) in the group with academic failure. A slight amount of compulsive tendencies seem to be compatible with adjustment and academic success, but not a high degree.

Another criterion of distribution is the *emphasis on the center* of the picture. The sequences of the majority of the students show little center distribution. Eighteen per cent of the adjusted group used center distribution, but none with rating *A*, as against 59 per cent of the unadjusted students. To a lesser degree but also increasing in the same direction is center distribution significant in regard to academic success: superior 28 per cent, satisfactory 37 per cent, academic failure 41 per cent. In the group with superior academic success such girls used center distribution who were less adjusted and described as constricted in some area. In longitudinal studies center distribution was preferred by personalities with a tendency to regression and with certain fixations. Indeed center distribution is most frequently used by pre-school age children and even there consistently used only by children with certain fixations. It occurred for instance with high percentages in sequences of children who were delayed in speech development because of a fixation of neurotic nature.

Still another aspect is *wide or narrow distribution* of form elements. Both are not frequent, neither in experiments with children nor in the sequences of these students. A valid interpretation seems to be hardly possible, except that overcontrol or lack of control seems to be at work. Configuration with other conspicuous factors suggests sometimes a more specific explanation. It must be emphasized that most of the formal criteria are more indicative in their configuration with each other than separately evaluated, and more indicative if they are consistently used than occasionally.

Nine of the students showed wide distribution in one picture of their sequence. Three have a low adjustment rating and two are brilliant girls with a severe problem. These nine girls were described as: unusually impulsive, exceedingly vulnerable, lacking drive and passive, shifting in their attitudes, easily aroused, not well controlled, showing aggressive outburst, as flighty, scattered, and poorly developed, and as disturbed and depressive (psychosis borderline case).

Eight girls showed more than one picture with wide distribution and eight girls showed occasionally narrow distribution. None used one of these elements consistently. Wide is more frequently used by girls with insufficient control, narrow by the constricted and highly controlled students. Wide distribution appears in about equal percentages in the adjusted and nonadjusted groups, whereas narrow distribution occurs in the unadjusted group with 41 per cent and with only 9 per cent in the adjusted group, and is frequently found with greater consistency in compulsory neurosis. It is interesting that narrow distribution is more frequent among students with satisfactory success than among those with academic failure, it does however not occur in the group with superior academic success.

There is no correlation between symmetry, or rigid distribution or center distribution, or wide or narrow distribution on one side and intelligence ratings on the other side. There is a slight correlation between vivid distribution and intelligence.

G. The Curve and the Edge

The curved line and preference for curved forms seems to be a more introversive factor than the preference for sharp edges and angular forms.

A configuration of *few curved forms and many sharp edges* was used by students described as overtly aggressive with low adjustment. This configuration does not occur in the syndrome of the adjusted group but with 18 per cent in the unadjusted. It does not occur in the group with superior academic success, and not among those with academic failure, but with 13 per cent in the group with satisfactory academic success.

Many curved forms and few sharp edges were shown by the well adjusted slightly passive, introversive productive types. It appears more frequently in the adjusted group (45 per cent) than in the unadjusted (23 per cent). The unadjusted students who used this configuration were described as preoccupied with themselves, some of them belonging to the group of brilliant girls with severe problems. All of them were more on the passive than on the aggressive side. There is no correlation with academic success.

Many curved forms and many edges were shown by types in whom the aggression is effective in form of impetus and energy, and in combination with the introversive trend, results in productivity. In those who are unadjusted, their aggression is not regularly present, but in form of outbursts, or latent in form or vulnerability. The more curved forms are present, the more we find sublimation. The more edges are present, the more we find open aggressive trend or identification with aggressive ideals.

No edges at all but many curved forms occur in 9 per cent of the adjusted, in 12 per cent of the unadjusted, in both groups in the introversive passive types. It is the only edge-curve combination which shows a slight correlation with intelligence. It occurs more frequently in sequences of students with

TABLE 3

	Adjustment			Intelligence			Academic Success		
Curves—Edges	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE < 30	Percentage of stud. with ST.W.C.R.*M*	Percentage of stud. with ST.W.C.R.*S*	Percentage of stud. with ST.W.C.R.*Q*
Few curves under 50% Offensive, aggressive more likely unadjusted; ac. satisf.	11	0	18				0	13	0
Med. curves 50%; few edges under 20% Slightly passive, obed. Adjustmt. Probably coöperat.	9								
Many curves over 70% few edges under 20% introv., creative; restrd., preoccupied, w. self; more likely unadj. thgh. adj. possible	17	5	23				14	29	23
Many curves over 50%; no edges Passive, lack of drive and vigor, broodingly introspect, introv., ac. super. and sat.	11	41	12				29	17	0
Many curves ov. 50%, med. edges over 25, under 50% Energetic, product., also irritable, vulnerable	21								
Many curves over 50% many edges over 50% Impetus; stubbornness, persistence; also aggr. outbursts intuitive and prod. energy	19								
Few curves under 50%. No or few edges under 20% Timid, constricted, repressed, inhibited; sup. acad. success	12						29	17	6

higher intelligence scores than with low ones. It occurs in 29 per cent in the group with superior academic success, in 16 per cent of the satisfactory and not among the students with academic failure.

H. FORM

One of the most important criteria is form in specific and distinguished from the more general concept of form, as we use it in this paper when we speak of form elements. In this latter case we include color, distribution, and all the elements discussed in this paper. With form in specific is meant the shape of the particular drawn or painted objects. The shape can be clear or vague or particularly sharp. The clearness of form is on one side highly perceptive, dependent on clearness of observation, on the other side it is also introversive, dependent on the richness and exactness of memory and on the readiness of associations (Table 4).

The students who used sharp or clear forms steadily in their sequences show the highest intelligence ratings, whereas those who used vague forms or were shifting frequently in their sequences between different form levels

TABLE 4

	Adjustment			Intelligence			Academic Success		
Form	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE < 30	Percentage of stud. with ST.W.C.R. *M*	Percentage of stud. with ST.W.C.R. *S*	Percentage of stud. with ST.W.C.R. *Q*
Sharp Highly intell., ACE above 50, or depress., constr., over-contr., narciss. dist.	26	4.5	41	50	43	7			
Clear Superior intelligence	16			60	40	0			
Medium High intell., and uncontr. or fair int. ACE 50-30	23			23	47	30			
Vague Low intell. unadj.; apath-leth.; also intell., adjusted artistic	6			33	33	33	0	12	0
Shifting (sh-vg) Low intell., ACE und. 60; unadj. Schizoid types	29	9	41	20	60	20	14	37	24
F— Unintell., lack of control, moody, or disturbed	17	14	29	11	0	33	0	21	24

show low intelligence ratings. The shifting seems to be more significant than the vagueness. This is one case which is in contrast to most of the other form elements. Here shifting and variety is not favorable, but steady quality. Whereas in other form elements variety is usually symptomatic of well functioning and plasticity of the individual, and consistency frequently a symptom of rigidity. However too great a sharpness cannot be interpreted too favorably; the students with the very sharp forms are highly intelligent but frequently not well adjusted. We find more adjusted girls among those with clear forms than among those with the very sharp ones.

Vague forms occur in both the adjusted and unadjusted students with equal small percentages, it is rather rare and sometimes also used by intelligent students as an artistic effect of contrast. Sharp form and shifting form level occur both in the unadjusted group with 41 per cent and in the adjusted with only 4.5 per cent and 9 per cent respectively. There is no correlation in regard to academic success.

If we compare the students whose sequences showed a *great variety of forms* (on the average in each picture at least five or more forms different from each other) with those who showed *little variety of form* (one to two different kinds of form in each picture), we find no particularly significant correlation to adjustment (Table 5). The frequency of a medium variety

TABLE 5

	Adjustment			Intelligence			Academic Success		
F-Variety	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	with ACE <30 Percentage of stud.	Percentage of stud. with ST.W.C.R. *M*	Percentage of stud. with ST.W.C.R. *S*	Percentage of stud. with ST.W.C.R. *Q*
Over 500% FV Highly intell., adjusted, overcontrolled, constricted unadjusted, also narciss. disturbances	12			50	50	0			
300-500% FV, F+ Highly intell. and sense for quality; sup. acad. success—4-500	20								
3-400	42			41	45	14	43	33	29
Under 200% FV Unintelligent, apathetic, lack of control	26			9	5	86			

(three to four forms) increases from the group with academic to that with superior academic success (29 per cent, 33 per cent, 43 per cent). The students with this medium variety show also the highest intelligence ratings in greatest number. It is probably no coincidence that most of these girls are the ones who produced clear forms. That is, their sense for variety and quantity does not impair their sense for quality, and also not exceed; quality is more important for the intelligent person than quantity. Besides that, many of these girls were described as conscientious and reliable. Almost all the girls with high intelligence ratings have an average variety of above three forms, whereas those with a variety below three forms show low intelligence ratings.

Another aspect on the borderline of content is whether forms are intended to be *realistic* (scored *Fr plus* when successful, *Fr minus* when not), or *expressionistic* and intentionally distorted, or *geometrized* (Table 6). This latter criterion will be influenced by fashion and art training in recent times

TABLE 6

	Adjustment			Intelligence			Academic Success		
Content—Form—Relation	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE $>$ 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE $<$ 30	Percentage of stud. with ST.W.C.R. *M*	Percentage of stud. with ST.W.C.R. *S*	Percentage of stud. with ST.W.C.R. *Q*
Fr over 60%+ Likely adjust., sup.	18			60	40	0	29	21	6
Fr— over 1 Disturbed		——	→	13	47	40		——	→
No Fr in 100% of sequence Not adjust. narciss. types	6	0	23		small numbers		0	8	6
Exp. Gifted neurotic and adjusted	30	32	29						
In 100% of seq. geom. abstract Dispersonalizing tend.; with r. and rh. perseveration; *very* rare, ac. fail., unadj.	11	0	6				0	8	12
Conspicuous symbolisms Narciss. disturbances	1.8	0	6				0	0	6

more frequently than other criteria. However, in numerous experiments with intellectuals only very rarely sequences of free drawings were found in which all pictures were geometrical designs and no picture an attempt at realistic or expressionistic representation. In these very few cases I found such consistent form attitude always psychologically significant and even when influenced by art training, corresponding to a deeply rooted disposition.

The geometrical forms or forms abstracted from organic form are a symptom of mystic detachment from the living organism and frequently symptomatic of depersonalizing tendencies, and in the feebleminded, of tendencies to perseveration; stylized forms, abstracted from forms of living organisms were favored by the painters of the early Christians who in contrast to the Greeks and Romans were opposed to individualistic experiences and condemned personal satisfactions in this world, but devoted their soul to life after death by repressing their drives with self-punishments and frustrations. The use of geometrical or abstract forms is not at all very indicative of a capacity to abstract thinking; it is on the contrary a form which is more easily achieved by the feebleminded and stereotyped thinking child than other forms and is much more frequent among feebleminded and stereotyped psychotic than among normal and neurotic children. As will be pointed out in the chapter on "*U*," harmony is more easily achieved with geometrical forms than with others. The truly abstract capacity is to achieve an excellent combination, where the whole of the picture with the parts and the parts with each other show similar proportions and this in several form elements.

Almost all the Sarah Lawrence College students attempted in spite of fashion and art training in the greatest part of their pictures to represent living organisms and objects related to them and their environment. They tried to draw and paint realistically as well as they could.

Only three students out of the 55 showed in their sequences consistently no realistic forms, all of them with low adjustment ratings and with low intelligence ratings. Two of them preferred geometrical forms and abstractions, one, a very tense, compulsory neurotic, very narcissistic student, and one described as narcissistically disturbed. The latter one could be recognized on the basis of the scoring in spite of the fact that she was influenced by art training. She was dispositionally inclined to mystic symbolisms. She used for her abstractions symbolic titles which in my opinion were queer even in case she wanted to pull my leg or to make fun. She wrote in printed letters under a black triangle with some loops around: "*Reason—emotion—will—progression—truth*" and added some scribbling to the letters and her name.

The third student did not directly make geometrical abstractions instead of realistic drawings, but in spite of being overstimulated by color, made rigidly symmetrical arrangements of color spots similar to flower designs made by other students, but not representing the flowers. Her attitudes were on one side rigid, on the other not enough controlled. This student was described as one with stereotyped ways of thinking, a somewhat hysterical but otherwise rather rigid, decadent type of personality.

The students who showed *Fr minus* show low intelligence and low adjustment ratings. There is a strong increase of high *ACE* ratings and there are no low *ACE* at all among the students whose sequences show in more than 60 per cent of the pictures *Fr* and *Fr plus*.

Among those students whose sequences show *Fr minus*, are very few with high intelligence, but there is a strong increase of low *ACE* ratings. Among the students who showed at least one to two expressionistic forms or grotesque distortions in their sequences we find bright and creative girls who are either adjusted or rather neurotic. There are no correlations in regard to intelligence.

Students who use *no Fr* at all in their whole sequence do not occur in the adjusted group and not in the academically superior group. Twenty-three per cent of the unadjusted students use *no Fr*. The academically satisfactory and the failure group show equal small percentages.

A 100 per cent preference for geometrical forms does not occur in the adjusted group and occurs only with six per cent in the unadjusted. It increases from the academically superior to the failing group (zero per cent, 8 per cent, 12 per cent).

Expressionistic forms appear in all groups with exactly equal percentages (29 per cent) except in the adjusted group, where they are slightly higher (32 per cent).

I. THE DETAIL

Another aspect is the *detail in form*. This refers mainly to realistic and and expressionistic form. Details should not be confounded with small form elements, which in themselves are little units. This criterion reveals to quite some degree the concreteness and tenseness of thinking.

The students who made *minutious details* were described as over-neat, pedantic, tight, and very frequently as depressive. This criterion does not occur in the adjusted group at all, but in 29 per cent of the unadjusted and is more frequent in the academically satisfactory group than in the two other academic groups.

TABLE 7

	Adjustment			Intelligence			Academic Success		
Details of Form	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE < 50	Percentage of stud. with ST.W.C.R. *M*	Percentage of stud. with ST.W.C.R. *S*	Percentage of stud. with ST.W.C.R. *Q*
Very few or no details Not concrete; mediocre intell., generalizing, stereotyped thinking; acad. failure	24	18	23				14	16	23
Few but essential details Concrete but more theoret. adj.	16	32	0	56	11	33	0	21	12
Many minutious details Routine, mechanist., over-neat; unadj., sat. w., depress., queer, hypochondriac	19	0	29				14	23	12
Unrel. dd. Disturbed, queer	3.6	0	6						

Unrelated details and scribblings which have no organic relation to the drawn or painted form and frequently have an overemphasized symbolistic meaning are extremely rare. They are indicative of disturbance. In this experiment only three students with narcissistic disturbances showed this form attitude in their sequences.

No or very few details have mostly unconcrete, generalizing students. This attitude occurs more frequently in the unadjusted group (23 per cent) and in the group with academic failure (23 per cent) than in the respective other groups.

Many details are shown by students who are most frequently described as concretely thinking. They are not particularly correlated to adjustment, occurring in 36 per cent of the adjusted and in 29 per cent of the unadjusted. They occur most frequently, in 57 per cent, of the group with superior academic success, but far less frequently in about equal percentages in the two other academic groups.

Few but essential details occur only in the adjusted and not in the unadjusted, but has no correlation to academic success.

J. THE QUALITY OF LINE

In general we find most frequently a mixture of different qualities of line and less frequently a consistent attitude.

The use of *rigid contours* (made after the forms were drawn or painted) can be frequently found in sequences of individuals who are occupied with the repression of hostile ideas, it occurs among compulsory neurotic as a rather consistent attitude. Contours are more frequent in the sequences of the unadjusted (23 per cent) than of the adjusted (14 per cent), do not

TABLE 8

Quality of lines	Adjustment			Intelligence			Academic Success		
	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE < 30	Percentage of stud. with ST.W.C.R. *M*	Percentage of stud. with ST.W.C.R. *S*	Percentage of stud. with ST.W.C.R. *Q*
Preference for i Anxious—irritable; intuitive	11						0	21	6
w (Very tentative) Anxious—pass., flighty, lack of control?	24				0				
e over 30% of sequence Creative, initiat.	20								
r over 2 Adjusted, acad. satisf.; highly controlled, but energetic—outgoing	24	27	12				20	29	20
c over 1 picture Repression of host. ideas and aggression, compulsive; routine mechanisms, overcontrolled, satisf. and fail. ac.	20	14	25				0	25	18
No l (loose) Aggressive, resistant, hostile, repressive	11						29	4	18
No w (weak) Usually mentally act.	18								
No r, no w (Partic. when combined with v details in line) introversive, creative	11								

occur in the superior academic group, but interestingly enough more frequently among the satisfactory (25 per cent) than among the failing (18 per cent). Whereas the contrary takes place with *rigid lines* in more than half of the sequence: this is more frequent among the adjusted than among the unadjusted (27 per cent, 12 per cent). The academically superior and the failing group show equal percentages (20 per cent) and the satisfactory a slight increase (29 per cent).

Obviously the immediately made rigid line has a meaning different from that of the rigid contour. Perhaps a certain amount of repression is compatible with adjustment and with satisfactory academic success, but perhaps it is a different kind and degree of repression from this which results in or contributes to unadjustment or academic failure. The students who used rigid lines without contours were most frequently more energetic and outgoing, whereas those with contours were frequently described as compulsive or highly over-controlled. There is no correlation with intelligence.

K. THE CONTINUITY OF THE WHOLE

The qualities of form level which shows certain powers of observation at work are not the only criteria of intelligence. The power of organization can be seen in the way an individual organizes the pictures as a *whole*, that is the tendency and ability to connect and combine all the parts of a picture to one whole continuous unity, in contrast to a tendency to make isolated designs and sketches. We have to be mild and cannot demand perfect artistic compositions as well as we have to grant that an individual, particularly one with some artistic sense will experiment and make some sketches of several isolated figures on one paper. However, experience has shown that no intelligent individual is satisfied to continue this experimenting with isolated forms throughout a sequence, as the project is not conceived as lessons for practicing and the individual is asked to draw or paint what he likes.

Continuity is achieved most satisfyingly when *all* parts of the picture are in a similar proportion to each other and to the whole format; I mean for instance: when in a picture, called W, three sizes of forms are used which I will call Size l, Size m, Size s, continuity is achieved when $W:l$ is similar to the relation $l:m$ and $m:s$, or when $W:(l \text{ plus } m)$ is similar to $l:(m \text{ plus } s)$, in other words when a certain proportion is approximately repeated between all parts, including the *spaces between* the drawn or painted forms. The more such intuitive relations can be found in several form elements, e.g., in form and in color, the greater the achieved continuity or harmony. This intuitive sense for such proportions again leads back to the human body,

TABLE 9

Continuity of whole	Adjustment			Intelligence			Academic Success		
	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE < 50	Percentage of stud. with ST.W.C.R.M	Percentage of stud. with ST.W.C.R.S	Percentage of stud. with ST.W.C.R.Q
U over 50% (with F cl or sh) High intell. ACE over 60; more likely adj. but also occur. in narc. disturb. schizoid types	33	41	23	56	33	11	57	38	24
U+ over 30% Highest intell. ACE 70-100, super. acad. succ., means 79	16			89	11	0			
U 30-40% or U+ under 25% Fair intellig., ACE 30-50	32			0	90	10			
U under 25% Low intell., perh.; more likely unadj.	13	22	29	0	0	79	0	29	29
U— Unsatisf. ac. succ. unadj. likely	6	0	18	→			0	4	12

where the single parts are also in similar proportions to each other. The circumstance that this capacity of relating forms with each other and with the whole complex of forms according to one principle can be found more frequently in the sequences of the intelligent than in those of the unintelligent, suggests that in certain functions of intelligence positive narcissistic tendencies are involved.

U plus was called when *all the forms* which can be seen fulfilled this relation, that is when also the space between the drawn forms, for instance the single parts of the background, were treated or at least intuitively conceived as proportioned forms. *U* was scored when *only the drawn or painted forms* were in relation to each other and to the whole. This is more frequently the case where the content is predominant, e.g., landscapes or scenes, than in decorative designs and abstractions where *U plus* is less rare and much easier achieved than in objective paintings. *U plus* in scene combined with human figures was evaluated as a particularly good combination. *U* *minus* was scored when *no proportion* at all existed between the single parts or when attempts to such proportions suggested by content were formally unsuccessful. Nothing was scored when the forms drawn or painted were isolated or meant as sketches and no intention existed to combine them into a whole picture.

High percentages of *U* (greater than 50 per cent of sequence) occur more frequently in the adjusted group than in the unadjusted (41 per cent, 23 per cent). This in comparison with other favorable form elements frequent presence of high *U* percentages in the unadjusted group suggests to me the acceptance of Theodor Reik's concept of two kinds of narcissism, the healthy and the sick or hurt narcissism. Intelligence seems to be certainly favorable for adjustment; but an individual with hurt narcissism can be intelligent without using it for adjustment.

The means of the *ACE* decrease with the decrease of *U* percentage, but the quality of *U* is more indicative for intelligence: the students with *U plus* only 30 per cent of their sequence but excellent combinations show the highest *ACE*'s. High *U* percentage occur with 57 per cent in the academically superior, with 38 per cent in the satisfactory, and with 24 per cent in the failing group. Low *U* percentage occurs with equal frequency (29 per cent) in the satisfactory and failing, and not in the superior group.

L. PERSPECTIVE

Linear perspective, that is giving depth and plastic to objects by mere line, was used by 13 per cent of the students. These have to the greater part good adjustment ratings, some of them belong to the group of brilliant students with a severe problem. Some have creative abilities. The intelligence score of those who used linear perspective only occasionally does not show any correlations. Among those who used it more consistently (in more than 25 per cent of their pictures) we find an increase of high intelligence ratings, but lower ratings than among those who used shading. Linear perspective without shading occurs in nearly similar percentages in the adjusted (14 per cent) and unadjusted group (18 per cent), but does not occur in the sequences of students with superior academic success.

Twenty-nine of the total number of students made figures and objects plastic by gray or black *shading without linear perspective.* This is twice as frequent in the adjusted group as in the unadjusted (36 per cent, 18 per cent). But it increases from the academically superior to the failing group (14 per cent, 25 per cent, 29 per cent) in spite of the fact that there is an increase of intelligence ratings.

TABLE 10

Perspective	Adjustment Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Intelligence Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE < 30	Academic Success Percentage of stud. with ST.W.C.R. *M*	Percentage of stud. with ST.W.C.R. *S*	Percentage of stud. with ST.W.C.R. *Q*
P over 25% of sequence Concrete and theoret., probably also intell. type	17			50	38	12			
P under 25% Constricted	25			50	20	30			
P, no P' Constrict., high self ctr., passive, not superior	13	14	18	14	30	56	0	17	12
P', no P Probably a defense mechanism, hypochondr., vulnerable; brood, introspect., anxious, narciss. disturbed, acad. fail., but can also be favorable, adj.	29	36	18	76	30	0	14	25	29
P over 25% + P' Adjusted, super. acad. success, intelligent types	13	14	6	86	14	0	29	17	6

The most favorable configuration is *much linear perspective and much shading* (in more than 25 per cent of the sequence): there is a steady increase from the unadjusted to the adjusted (6 per cent, 18 per cent), from the academically failing to the superior (6 per cent, 17 per cent, 29 per cent), and an increase of intelligence ratings. In the description of these students we find such who have both some introversive and some extraversive trends, theoretical and concrete thinking, with a slight emphasis on the introspective side, but who are also good observers.

M. MOVEMENT ELEMENTS IN DRAWING AND PAINTING (3, 5, 9, 11)

For various reasons the conception of movement elements in drawing and painting is different, namely wider and partly more formal, than that of Rorschach. Besides the primary movement elements, the representation of human or humanlike figures and animals in movement or posture, there are to be considered some merely formal criteria which are introversive factors and occur in the sequences of individuals with creative abilities. The primary movement elements, namely the movement of human figures, belong to a high degree to the ideational *content* of the picture and are to be discussed later.

1. *Formal or Secondary Movement Elements*

The formal criteria, altogether called *secondary movement elements,* are four: (*a*) high percentage of curved forms, (*b*) vivid distribution according to diagonal, (*c*) vivid spontaneous details in silhouette, (*d*) differentiated rhythm. All these four elements are elements of introversion, contributing to the liveliness and originality of visual experience and affording imagination.

(*a*) and (*b*): We have discussed before the reaction of students regarding curved forms and vivid distribution.

(*c*) *Vivid details in the silhouettes* of shapes have to be considered in contrast to stencil-like forms, executed in stiff, stylized lines and lacking in variation of outline and pressure of line. Among those who were able to create this element in more than half of their pictures comparatively many of the well adjusted students can be found. However among those with 100 per cent consistency we find a number of less well adjusted, particularly brilliant students with a severe problem, and one psychosis borderline case. Among those who used this element rarely, only once or twice, or not at all, both types are present, adjusted and maladjusted.

(*d*) *Differentiated rhythm* similar to Koffka's concept (11), was called a repetition of similar, but slightly varying forms of similar but slightly varying sizes, distances, and directions. Emphasis has to be put on slight variation in contrast to *rigid uniform rhythm,* a stereotyped repetition of the same forms, in similar distances in the same directions. Both elements are rare, but differentiated rhythm is achieved only by individuals with creative gifts and above average thinking. We may call it an original element. Whereas rigid uniform rhythm is an element occurring frequently in compulsory neurosis, in deteriorated psychotic and feebleminded. The more stereotyped a person thinks, the more consistently this element is preferred. In this experiment it was shown only by two girls, both highly maladjusted with compulsory neurotic ideas.

In considering all the secondary movement elements together (Table 11) we find that 9 per cent of the adjusted students showed sequences with few *movement elements* (on the average three to four in three pictures) as against 47 per cent of the unadjusted group. In the unadjusted group seem

TABLE 11

	Adjustment			Intelligence			Academic Success		
Secondary movement elements	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE < 30	Percentage of stud. with ST.W.C.R. *M*	Percentage of stud. with ST.W.C.R. *S*	Percentage of stud. with ST.W.C.R. *Q*
SM over 210% Highly creative, well adj., schizoid types, narc. dist., ac. sup. and fail.	20	27	18				←———	———→	
SM 175-210% Creative, well adjusted; schiz. types, acad. sup. and fail.	34						←———	———→	
SM 130-175% Not very creative; acad. satisf.	24						———→		←———
SM under 130% Not creative, unadj., acad. sat.	22	9	47				14	33	12
Rig. un. rh. over 1 pict. Compulsive, stereot. thinking	9	0	6						

to be more students with lack of creative abilities than in the adjusted. There are 14 per cent of the academically superior group, 12 per cent of the failing, but 33 per cent of the satisfactory. It is understandable that only few of the uncreative girls are in the group with superior academic success, but interesting that the greatest number of uncreative girls are not in the failing but in the satisfactory group. Exactly the reverse is the case with those who have *many movement elements* (on the average more than two in each picture): more creative students are in the adjusted than in the unadjusted group, most in the academically superior, and more in the failing than in the satisfactory group. Compared with the intelligence rating there seems to be a chance that more of the failing students than of the satisfactory have dispositionally the qualities of superior students. There is, however, no reliable correlation between secondary movement elements and intelligence ratings.

2. *The Human Figure*

The human figure is perhaps the most difficult problem for interpretation. On one side the drawing of human figures in a certain posture or in movement offers the most excellent possibilities for spiritual identification as well as for primitive comparison with one's own body. A high frequency of human figures (scored *H*) in free drawings can be considered from the point of view of *content,* like a frequent association, as a psychologically revealing factor. I will discuss this in the chapter on *content.* On the other hand from a formal point of view, it is more difficult to evaluate the lack of human figures, or stiff human figures without movement or posture (*H minus*). It seems to be a possibility that practice in drawing plays a

TABLE 12

	Adjustment			Intelligence			Academic Success		
Human figures and animals as movement tentative	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE < 30	Percentage of stud. with ST.W.C.R. M	Percentage of stud. with ST.W.C.R. S	Percentage of stud. with ST.W.C.R. Q
Many H+ in free drawings Creative, ambi-eq., extravers., *H* over 75% plus high *SM%*, sup. ac. succ., also narciss. dist., particularly when stereot. cont.	20			56	44	0			
H—; many SM Hostile relations to people likely	16			17	19	64		⟶	⟶
H—; partic. with few SM Not creative infantile narciss. preoccup. with relat. to people, reduced intell., occurs also in disturbed									
A— Unadjusted	9								
A% high over F5% Unadjusted, stereotyped		18	47	⟶	⟶			⟶	⟶
Scenes with H+ Adjust.; acad. sup., highly intell.	24			⟵	⟵		72	43	35

rôle, though I found a number of students helped themselves in drawing the human figures with primitive one-dimensional lines and were in this way still able to express good movement (*H plus*), or at least one part of the body in movement (*H plus minus*).

There are five students who drew no human figure in their *free* drawings, and only *one* human figure when asked to draw a group of human figures. Three of them have *H minus.* Of these three two are adjusted girls, one with satisfactory academic success, one failing. The third belongs to the brilliant students with severe problem, is uncreative, but has satisfactory academic success, "routine" girl, in reality probably compulsive. Two students succeeded in expressing some movement, when asked to draw human figures; one of them is not well adjusted (*D minus*). One student was also not able to draw a human figure, when asked. The students who drew no human figures in their free drawings are comparatively few. It is interesting that the human figures increase with the percentages of secondary movement elements. The students with the highest *H* percentage (more than 75 per cent of their sequence) have generally with few exceptions an *SM* percentage above 190 per cent (that is an average of 2 *SM* in one picture) and also the most *H plus.* The most *H minus* and *H plus* minus can be found among those who have a low *SM* percentage, the less creative.

A high SM percentage plus high H percentage can be found with a somewhat higher frequency among the "adjusted" students (27 per cent) than among the unadjusted (18 per cent) and to a much higher degree among the superior students (57 per cent) than among the satisfactory (17 per cent) and the failing (24 per cent).

The *H minus* occur in both the adjusted and the unadjusted group with about equal percentages (29 per cent, 31 per cent). But a glance at certain statements about these students shows that these are not the types of whom one can expect too good relations to people. It is interesting that those among the students with *H minus* who have nevertheless many human figures are frequently aggressive, that is they have an extroversive tendency. It seems to me not impossible that in these cases a tendency to conflict with other people on a narcissistic basis is reflected in the unsuccessful human figure which is accompanied by reduced creativity. Particularly interesting in this regard are three students whose sequences show many human figures, but few secondary movement elements; one was described by the teachers as not inclined to open up towards people and as having childish explosions; another one as very disturbed and having bad relations to people, particularly men, and infantile aggressiveness; the third is the case in which so many interpretations failed; they failed, however, not in that she had aggressive outbursts. All three were uncreative.

These students seem to be innerly preoccupied with themselves and with their relations to other people, have no capacity to sublimate their preoccupation and cannot control themselves externally when they have to do with other people.

Intelligence definitely plays a rôle in producing a human figure in movement. There is a correlation with the *ACE* ratings.

Only 17 per cent of the students whose sequences showed *H minus* had high *ACE* ratings as against 64 per cent who had low ratings. Whereas we find among those whose sequences showed *H plus*, 56 per cent with high *ACE* ratings and none with low ratings.

Many human figures combined with many *SM* are a positive element in several regards, particularly when combined with good *U*. However, psychotic cases show sometimes tremendous amount of human figures and high *Sm* percentage. In these cases the overstrong preoccupation with the insoluble conflict was reflected, besides the deterioration of other positive form attitudes, in that the human figures became the only stereotyped content. This is not the case with the *S.L.* students; in none of their sequences the human figures excludes other contents and objects.

The two narcissistically disturbed students whose sequences show many secondary movement elements and many human figures show no stereotypy in regard to human figures but other significant factors: one withdraws, when not using the human figure, completely from the living organic form to the abstract, and uses this in a stereotyped way with symbolisms. Referring to what was said before in regard to art training, it must be mentioned that other students coming from the same art class behaved in the experiment, when left to free spontaneous drawing or painting, unlike this one.

The other student showed also no complete stereotypy in regard to human figures, but was nearer to it, and in addition showed scattered, disorganized distribution, symbolisms and difficulties with *U* (continuity of picture).

There was one student of whom one could speak as having almost a stereotypy in regard to human figures, besides few abstractions probably influenced by art training. She was one of those who offered extremely many "free" drawings with almost entirely human figures, in excellent movements. She drew these human figures and one animal (a horse) in movement, in spite of a (probably rationalized) bad conscience expressed by the words: "*If my* *art teacher would see this!"* (referring to the horse). Her reactions and capacities to sublimation were however in most regards so positive, that one could not consider her as a disturbed personality. In the Rorschach she was described as "either a genius or strange."

Again another student drew a torso, where just the parts starting to show a movement, were cut away. The student was, besides many favorable statements, described by the teachers as a hypochondriac, worrying over trifles. One should not overemphasize any connection between these two circumstances, as, of course, the torso became since the first excavations at the time of the Renaissance, an almost traditional element in art, particularly since Rodin brought it into fashion. Students living in intellectual circles, interested in art, may be influenced in this way. Torsos and parts of the human body occur however sometimes in the drawings of hypochondriacs.

I think that where we find many *SAI* and many human figures in *movement,* whether normal or psychotic, the kind of movement and the literary content of the picture can be considered for interpretation *to a certain degree* for the psychoanalytically trained interpreter, when he considers them in connection with the main character structure, indicated by the configuration of form attitudes, and possibly not in a blind diagnosis. I will speak further of the human figure in the section on "Content."

In comparing two types of students, on one side these extraversive-energetic, or ambi-equal or at least with some extraversive trends in form of outlets like explosive outbursts, excitability,—on the other side the more introversive, passive introspective types, the content human figures, not used as a *stereotyped content* in free drawings and paintings (including those with and without movements) was found much more frequent among those with extraversive trends (35 per cent) than among the introversive (10 per cent). Eight per cent of the extraversive and 4 per cent of the introversive made these human figures in good movements in their free drawings.

If we consider *all* the good movements (*H plus*), not only those in the free drawings but including these drawings where the students were asked to draw or paint a group of human figures, we find a similar relation: 39 per cent of students with extraversive trends and 10 per cent of the introversive showed H plus. That means that among those freely using the human figures were less students with good movements than those who were asked to make human figures and of whom the movement had to be "drawn out."

Or, in other words, the reason for these students to make no human figures in their free drawings was not an actual incapability of drawing them in movement; there is also no correlation with intelligence in this regard. There are a few students who made *H minus* in the *free* drawings. By far more frequent are the students who made *H* in the requested drawings, and this was slightly more frequently done by the introversive students. In these cases it is possible that an incapability of drawing human figures in movement may have prevented the students from offering human figures in their free drawings.

It is, therefore, not so simple as in the case in the Rorschach test, to interpret human figures and their movement in drawings, and they have to be evaluated differently.

It is conspicuous that most of the students with *H minus* are not likely to have good relations to other people. Either they are too passive or too aggressive and uncontrolled to have good contacts, but we may suspect that their problem is hurt narcissism.

3. *The Animal*

The occurrence of animals has to be considered also from two sides, from the point of view of movements and as a content.

Little children like to draw animals more frequently than older children or adolescents although other objects like houses, boats, trees, plants, and human figures are more frequent in their pictures than animals. In the Rorschach test the animal proved to be an indicator of stereotyped thinking, that is, people with more fantasy see less animals; whereas those with little fantasy see many animals, or eventually see another stereotype element if their imagination is compelled to go in one particular direction and the stereotyped element represents an association, with which the individual is preoccupied.

In the more recent Rorschach literature the percentage of animal movements when higher than that of human movements is frequently interpreted as representing "sensuality."

Thirteen per cent of the adjusted students make animals in their free drawings as against 51 per cent of the unadjusted.

In the group of academically superior students we find *no* sequence with animals, in the satisfactory group 25 per cent and in the unsatisfactory group 41 per cent.

It is particularly interesting now that these adjusted students who represented animals drew or painted them in good *movement* (scoring *A plus*) whereas most of the unadjusted made their animals stiff or static and very primitive. In this latter case the animal is an association which is done away with in a primitive, superficial way. In the first case an introversive component is combined with the perhaps sensual association. It is sublimated. Furthermore the students with animals in good movement frequently drew at least some human figures in good movement (*H plus* and *H*), whether adjusted or unadjusted.

Movement in animals therefore has to be evaluated as a more positive factor than *H plus minus* or *H minus*. Whereas the occurrence of animals without movement at large is to be considered *a negative sign*.

The occurrence of animals has also to be considered from the point of view of content. A very large percentage of animals with neglect of other contents is a negative factor and an element of stereotypy as in the Rorschach. Indeed these *unadjusted* students who drew animals used them in a stereotyped way, without movement, neglecting other contents.

Animals as a stereotyped content are a more negative factor than *A minus* or *H minus*. One unadjusted student shows a low *A* percentage but other contents which are infantile, as against five students with high *A* percentage.

N. COLOR REACTIONS

The less color variety the students use in one picture, the less they paint on the whole. The number of painted pictures in relation to the whole

TABLE 13

	Adjustment			Intelligence			Academic Success		
Significant color reactions	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE < 30	Percentage of stud. with ST.W.C.R. *M*	Percentage of stud. with ST.W.C.R. *S*	Percentage of stud. with ST.W.C.R. *Q*
Average C var. 3-6 Adj., sup. ac. succ.	54	50	35				72	42	35
Low C var. under 3 Emotionally poorly developed, lack of drive, constricted	14	0	12						
High C var. over 7 Much drive, impulsive, also aggress. egoc. types	7	0	16						
5C:4F per pict. average relation; or C more than F Satisf. ac. succ. unadj. when both *C* & *F* reduced (f.i. 3.5:3)	49	56	35				18	46	0

TABLE 13 (*continued*)

	Adjustment			Intelligence			Academic Success		
Significant color reactions	Percentage of total number of stud.	Percentage of adjusted students	Percentage of unadjusted students	Percentage of stud. with ACE > 60	Percentage of stud. with ACE 30-60	Percentage of stud. with ACE < 30	Percentage of stud. with ST.W.C.R. *M*	Percentage of stud. with ST.W.C.R. *S*	Percentage of stud. with ST.W.C.R. *Q*
6C: under 3F Unadjusted; ac. fail. likely	12	0	35					——→	
F var. more than C var. Intell. better devel. than emotionally; overcontrol.	18	18	30					25	12
C var. higher than adequate (5C:4F adequate) Acad. superior; and failing	27						86	29	88
Vivid color scale Adjusted, creative	34	45	18				43	17	29
Dark color scale Adj. and ac. sup., creative	9	14	0				29	8	6
Pale color scale Unadj., likely pass., not creat.	27	0	29				14	17	24
Brown lacking More likely adj, ac. sup.	24	41	18				42	25	12
Avoidance of other color than brown More likely unadj.									
lack red	8	0	16				0	13	0
lack blue	1.8	0	6				0	0	6
lack yellow	10	0	18				0	8	12
Red predominant Lack of control, impulsiveness, excitability	27	4.5	29				0	21	18
Yellow predominant Disturbance	1.8	0	6				0	4	0
Black predominant Depress., narciss. disturbed	6						14	17	6
Brown predominant Depress., narciss. disturb.	22	18	41				14	29	18
Much grey Depress., narciss. disturb. passive		14	29				0	17	24

TABLE 14

AVERAGES OF FORM ELEMENTS

(Percentages referring to number of pictures)			
	Format		
55% (hor. conv.)	20% (upr. conv.)	18% ☐	7% (unus.)
	Size		
15% *l*	25% *m*	58% *s*	
	Format-Rel.		
25% *Ma*	17% *Ma Di* and *Di Ma*	53% *Di*	5% *Ng* [2% *E*]
	Size of F.E.		
27% *l* 4% *lm*	21 % *lms* 10% *ms* 20% *m*	15% *s*	3% *ls*
	Viv. Det.		
	22%+ 49%± 22%∓		
	Curves		
	71%+ 18%± 7%∓	4%—	
	Edges		
	26%+ 14%+ 12%∓	48%—	
	Distribution		
9% *w*, 1% *c*↑	40% *v* 10% *r* 8% *R*, 9% *L*	36% *c*	2% *n*
		Sym.	
		12%+ 5%± 19%(+)	
	Diff. Rhythm.	*r.u.rh.*	
	9%+ 10%± 6%∓ 75%—	1%+ 1%± 1%∓	
Variety in relation to whole sequence *C* var: *F* var: *S* var = 5:7:3		*Variety in relation to number of painted pictures* *C* var: *F* var = 5:4	
16% *Sp*	45% *Sp* + *L*	32% *L*	
	Lines		
53% *l*	17% *e* 19% *w* 9% *c*	32% *r*	10% *a*
	Colors		
32% yellow 48% red	24% green 18% grey 14% pink 5% purple	34% black 12% white 47% blue 19% brown	
	Movement elements		
48% *H*+	6% *H*± 8% *A* 8% *H*∓ and *H*— 188% *SM*	19% *M*	
	Org. of whole, Fr, Persp.		
	36% *U*	85% *Up*	
	Fr+	88%	
	Fr±	3%	
	Fr—	6%	
	abstr.	1%	

TABLE 14 (*continued*)

exp.	7%
symbol	0
p	8%
p'	25%

Contents in free drawings	
Landscapes	46%
H. Figures	40%
Scenes	28%
Animals	22%
Trees	18%
H. Faces	14%
Houses	12%
Horses	12%
Abstr.	12%
Water	10%
Clouds	8%
Sunset	4%

TABLE 15

DEVIATIONS FROM THE AVERAGE SIGNIFICANT OF ADJUSTMENT

	Percentages of Adjusted students (Rated *A* or *B*)	Percentages of unadjusted students (Rated *D* or *E*)
	Per cent	Per cent
Ng	0	12
Di	0	29
100% *l* Form el.	0	6
100% *s* Form el.	0	6
sym	27	35
r distr	18	29
c distr	18	59
w distr	9	0
u distr	0	41
sc distr	0	6
many edges *few curves*	0	18
no or few edges *many curves*	41	12
few edges *many curves*	5	23
F shifting	9	41
F sharp	4.5	41
U less than 25%	22	29
U—	0	18
F—	14	29
many *m.* *dd*	0	29
*dd** scribblings	0	6
few or no *d*	18	23
100% no *Fr*	0	23

TABLE 15 (*continued*)

	Percentages of Adjusted students (Rated *A* or *B*)	Percentages of unadjusted students (Rated *D* or *E*)
	Per cent	Per cent
100% abstr.	0	6
exp.	32	29
symb	0	6*
c lines	14	23
r lines more than 50%	27	12
P no *P'*	14	18
SM less than 130%	9	47
H, no or one	14	6
No *m*	9	35
A% high	18	47
slow	4	18
quick	23	6
100% *Sp* No *L*	4.5	41
ptg less than 30%	32	41
Col var. less than 200%	0	12
dk col *sc*	14	0
pale col *sc*	0	29
gl col *sc*	4.5	12
red dominant	4.5	29
red lack	0	18
yellow dom.	0	6
yellow lack	0	18
brown dom.	18	41
Brown lack	41	18
Much grey	14	29
No blue	0	6*
infant. cont.	14	35
scenes	38	18
high *SM* plus high *H*	27	18
U more than 50% combined with *F cl* or *sh*	41	23
many *Ma*	22	0
l m s 100%	18	0
few essent *d*	32	0
P more than 25% plus *P'*	14	6
viv *C sc*	45	18
Col var more than 300%	50	35
ptg more than 50%	18	59

The underlined form elements and percentages show the syndrome of conspicuous deviations in which the two groups differ from each other or which are strong indicators. These are the basis for the rating scale.

TABLE 16

DEVIATION FROM THE AVERAGE SIGNIFICANCE OF ACADEMIC SUCCESS GROUPS

	M superior	*S* satisf.	*Q* unsatisf.
	Percentage of stud.	Percentage st.	Percentage of st.
s sizes	14.3	12.5	12
un. formats increas.	14.3	16.7	23.5
Ng	14.3	8.3	5.9
Di	78.6	16.7	5.9
100% *s f c*	14.3	4.2	11.8
sym	28.6	33.3	11.8
r distr.	14.3	12.5	29.4
c distr.	28.6	37.5	41.2
w distr.	28.6	12.5	11.8
n distr.	0	20.9	11.8
many edges few curves	0	12.5	0
few edges many curves	14.3	29.2	23.5
no edges many curves	28.6	16.7	0
no edges few curves	28.6	16.7	5.9
F vg	0	12.5	0
F shifting	14.3	37.5	23 5
U less than 25%	0	29.2	29.4
U—	0	4.2	11.8
F—	0	20.9	23.5
m.m.dd	14.3	23.5	11.7
few or no *d*	14.3	16.7	23.5
no *Fr*	0	8.3	5.9
abstr.	0	8.3	11.8
symb.	0	0	5.9
c lines	0	25	17.6
t lines	*0*	*20.9*	*5.9*
no *l* lines	28.6	4.2	17.5
P, and *P'*	0	16.7	11.8
P, no *P*	14.3	25	29.4
SM less than 130	14.3	35.5	11.8
H—	43	33.3	17.6
slow	43	4.2	5.9
quirk	43	8.3	5.9
100% *l f c*	0	0	5.9
H-O or *l* (zero or one)	0	17	6
high *SM* few *H*	0	8	0
A	0	25	41
L more than (*Sp* and *L*)	14	8	24
ptg less than 30%	29	38	41
c var less than 100%	0	17	0
dk c scale	29	6	6
pale *c* scale	14	17	24
red dom.	0	21	18
red lack	0	13	0

TABLE 16 (*continued*)

	M superior	*S* satisf.	*Q* unsatisf.
	Percentage of stud.	Percentage st.	Percentage of st.
brown dom.	14	29	18
brown lack	42	25	12
yellow dom.	0	4*	0
no yellow	0	8	12
black dom.	14	17	6
white more than *l* (one)	43	17	24
l white	43	33	29
no grey	14	17	24
much grey	0	17	24
no blue	0	0	6
inf. cont.	14	33	24
n more than 50%	57	38	24
Ma	14	13	0
F var. more than 300%	43	33	29
no *r* no so lines	14	2 17	0
P more than 25% *P'*	29	17	6
Fr 100%	29	21	6
Scenes	72	17	29
many *l*, m, s	0	13	6
few but ess. *d*	0	21	12
many *d*	57	25	35
viv *C* scale	43	17	29
C var more than 300%	72	42	35

sequence is usually more than 50 per cent when combined with a high color variety within one picture; the number of students with vivid color scale decreases, that of those with pale color-scale increases with decreasing color variety per painted picture.

All of the adjusted girls had a color variety above three colors per painted picture, they used at *least* three colors but on the average five colors in one picture; there are also some who used seven and eight colors. Color variety was in the adjusted group in general somewhat higher than the total average (5*C*). The energetic types of the adjusted, with impetus, initiative, showed a somewhat higher proportion of color variety to form variety (6-7 *C*:4*F* per picture on the average).

In the unadjusted group greater extremes, students with a high color variety (above six colors in one picture) and those with a low one (below two colors) can be found. Those with lowest color variety were described as emotionally poorly developed, or emotionally defective, constricted. Those with highest color variety frequently as impulsive, hysterical types, uncontrolled, easily aroused.

The sequence of 86 per cent of the superior group show a color variety in relation to form variety which is *greater than 5C:4F,* on the average 6C:4F. But they have at least four different forms in one picture. Thirty-five per cent of the unadjusted students showed in their sequences a form variety, too small in relation to color variety (means: 6C:2.8F in one picture), 35 per cent consisting of students nearer to the middle group of adjustment (rating C), showed proportions similar to the adjusted, but frequently both color and form variety was reduced in comparison with the adjusted. The remaining part consisted of students whose form variety was higher than color variety, suggesting that their intellectual development was better than their emotional, which was confirmed by the teachers.

In the three different groups of academic success the situation was the following:

The means of color variety per single painted picture in proportion to form variety are:

6C:4F superior success
4C:3.5F satisfactory success
5C:4.6F unsatisfactory success (lower form level)

These means do not suggest very much; perhaps one can say that the superior group has most emotional drive at their disposal and the satisfactory least.

In the satisfactory group 25 per cent of the students show a *greater form variety* than color variety, 29 per cent of the students show *more color* in relation to form than the mean 5:4. (5C:4F "adequate color-form relation"). But the majority, 46 per cent of the satisfactory groups, shows adequate color-form relation or C about equal to F.

In the unsatisfactory group we find 12 per cent with form variety greater than color variety, none with adequate relation, and 88 per cent with color variety greater than adequate. This group is in this regard like the superior group. The students of both groups seem to have more "drive" than the satisfactory group, but use it differently.

In regard to *color scale,* we find that a *dark* color scale was not used by the unadjusted students, but was used by 14 per cent of the adjusted (sensitive or moody students); it was little used by the unsatisfactory (6 per cent) and satisfactory (8 per cent) and rather frequently by the academically superior (29 per cent). The most frequent in all groups and also the optimum is *vivid* color scale: *45 per cent of the adjusted, 43 per cent of the academically superior.* Seventeen per cent of the satisfactory and 29 per cent of the unsatisfactory. The vividness of experiencing seems to be still greater in the academically failing group than in the medium satisfactory group.

Interesting is the relation of color variety to sharp and vague forms: the means of color variety in the sequences of the students who used sharp forms consistently, is 5.6*C*, the means of those who used vague or shifted frequently to vague forms is 2.9*C*.

Decisiveness seems to be involved in the choice of vague or sharp form, which is dependent on a certain amount of energy. It is also interesting that almost all the students who are shifting to vague forms, show a *pale color scale*, but none of these who used sharp forms (with one exception who showed sharp forms, a pale color scale and low color variety, avoiding certain colors). Whereas the students with sharp forms were more inclined to vivid and sometimes glaring color scale.

In the sequences of several students who were characterized as passive, pale color scale and low color variety was found, but there were others with low color variety who were not passive at all.

There is no correlation between creativeness and color attitudes.

In regard to the single colors, I found that by the great majority of students all colors were used and none was avoided, except brown, which was lacking in the sequences of 41 per cent of the adjusted group as well as in 42 per cent of the group with superior academic success. Eighteen per cent of the adjusted and 14 per cent of the academically superior group showed on the other hand sequences with much brown. None of the adjusted and none of the academically superior students showed on their sequences any lack of red, or lack of yellow, or lack of blue.

We found the following color-avoidances: 18 per cent of the unadjusted and 13 per cent of the academically satisfactory group used *no red* in their sequences; *no yellow* was used by 18 per cent of the unadjusted, 8 per cent of the academically satisfactory, and 12 per cent of the academically failing group.

One unadjusted, academically failing student and two of the brilliant students with severe problem used *no blue*.

Black was used occasionally by most students, but in most cases little in relation to the other colors. No color at all was used by one student described as immature and without impetus.

Lack of control or aggressive outbursts can be found in students whose sequences show poor color variety as well as in those who have a great color variety. It is more indicative in this regard, when red is predominant, particularly when combined with inanimate movement or with many edges. Some sequences with generally pale color scale besides the frequent use of red belonged to students with lack of control.

O. THE CONTENT (ORIGINALITY AND QUEERNESS)

The question arises whether the form elements employed are determined mainly by the emotional attitude of the individual or whether at least sometimes by outside factors. We can set aside the case of the artist who is ordered to make a picture.

But one might expect a child to make the obvious choice of green if she were going to make a tree. Yet a boy with whom I worked and who liked to paint mainly in blue and green made a number of pictures with blue trees. We find many common objects in children's art works represented in quite different ways. There are sometimes "epidemic" motifs, which go around in a group, like the World's Fair in the summer of 1939, or war scenes, airplanes, boats. But it is interesting how much less the children influence each other in their manner of formal representation of an object than in their choice of theme. It is similar with adolescents.

It should be clear that everything said in regard to form attitudes and the possibilities of interpreting them refers only to free drawings and paintings done by heart, where the contents are not seen objects or models, drawn or painted from "nature." That is the environment during the time of drawing.

In selecting objects "from nature" the selection may be influenced as indicated in Table *B*.

On the other hand, any *freely* selected content is influenced by the psychic dynamics of the individual and can be influenced as well at the same time by outside stimuli as recent experiences, environmental and cultural factors. As was said at the beginning, the content has to be considered as subjected to similar laws as Freud has described for the dreams. However, I think that the wish *for communication* on certain cases reinforced by the wish for exhibition, represents an important libido-quality, which has a more progressive direction in contrast to the more regressive tendencies of the dream-forces. The dream is unintentional. It "happens" to the individual. The great art works have always an intentional character and besides past experiences, consciously or unconsciously used, a new reality steps into existence which was not here before in a material quantitative sense as well as in a qualitative or "spiritual" sense which we call originality.

The great art works differ from other merely spontaneous lay productions in that they reflect different qualities and depth layers of a personality as well as the outside world in a *simultaneous way*. Simultaneous solutions of different form problems and simultaneous solution of form problems combined with solution of realistic problems is a criterion of artistic sense.

The mere fact that something materially new steps into existence shows the progressive character of the artistic production in contrast to the dream, which is not materialized and moreover usually bound by psychic forces to be forgotten.

However, the more important the real affective content is which tends to be communicated by artistic production on one hand, and the stronger

TABLE *B*

Influenced	Not influenced
Format of paper	Size of paper
Size of form elements in relation to each other	Unusual formats
	Size of form elements in relation to whole format. *Ma, Di.*
*Symmetry, wide, narrow	Rigid and vivid distribution
Distribution ——————→	Preference for edges and curves
Perspective ——————→	Shading
	Quality of form (sharp—vague*)
	F—Details of form
	Distribution of form
	N
	Preference for spots
	Preference for line
	Quality of line
	Differentiated rhythm
Human figures and animals as *content* and content in general	Symbolism inanimate movement
←——————	Movement of *H* and *A*
Lack or choice of certain single colors	Preference for painting
	Predominance of certain colors in relation to whole
	Avoidance of certain colors
	Color scale, pale or glaring

(The arrows indicate that form attitudes are sometimes stronger than outside stimuli.)

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*Influenced only when selection is not free at all, that is when objects are given in certain distances and positions. There is still a choice possible for individual to cut out a specific part of a landscape.

the tendencies to repression in an individual are, the more will the emotional content also, like the dream, be submitted to changes, disguise, distortions and displacements. This, however, will depend entirely on the qualities of these two factors and their quantitative proportions to each other: tendency to communication on one side, repressing control and censorship on the other side. If the repression is not so great, more can be shown of the emotional content by the means of literary content, or, in other words, normal language and unconscious symbolic language are nearer to each other than when the emotional content has to be disguised.

We can, therefore, expect that an individual with little repression reveals more in the content of his pictures than a very repressed individual, and in such cases the content, considered together with the character structure, offers some possibilities for interpretation.

The drawing of human figures in a certain posture of movement offers the most perfect possibility for identification, and for representing a wish fulfillment, or occasionally situations of which the individual is afraid, or both. The more frequently a content is repeated, the more significant is it for the personality. This was discussed in the section on Movement of Human Figures, and particularly in connection with animal stereotypy.

It is, of course, rather hard to define when a content is "original" in general and it is still harder to define in concrete when it is "original" in a positive sense in particular contrast to unusual in the negative sense of "queer." It is preferable, instead of insisting on rigid definitions here, to consider such hardly definable elements in configuration with all the others. In cases which are not strikingly obvious but doubtful, one should consider the quality of Form, the *U*, the secondary movement elements, or other obvious form attitudes. Usually doubtful elements become in configuration with others more meaningful, but one does not have to find necessarily always a meaning behind everything and has to leave doubtful interpretations apart. It is scientifically more valuable to consider reactions from the point of view of whether they were above or below average. A reaction was considered *queer* when it would not reach even the level of conventional reactions found usually. For instance the so-called "abstractions" were treated in such a way that it was considered whether the individual was able to cope in other pictures with conventional ideas or perhaps with problems above average. Most of the "abstractions" are indeed very conventional, influenced by art fashion and not symptomatic of independent thinking. They are in the best cases only a primitive dealing with the simultaneity of inorganic, stereotyped forms, and rarely an abstract original concept, but a repetition of a scheme, seen somewhere. They are, of course, to be considered as more favorable than a confused, disorganized distribution of realistic forms, as in the case of a disturbed student who showed scattered distribution besides symbolisms—a self-portrait with a shoe and geometrical forms in her brain. In the worst cases such "abstractions" are endowed with symbolisms and are combined frequently with compulsive or automatic ways of thinking. Another student mentioned before, seemed in this regard a border-line case. She might have seen a picture of Dali, like one called "geopoliticus" showing abstract forms of an egg and a parachute, explained by himself in the following way: "Parachute—paranaissance—protection, cupola, placenta, catholicism. Egg—earthly distortion, biological elipse." There is, of course, still more literary sense in this explanation than in that of the above-mentioned student, although it is highly sentimental and perceptively not generally understandable. It is not the place here to discuss the speculations of Dali, but it is the place to discuss Dali's influence as an environmental factor on this student. Because of the probability of such an influence this student's symbolism (reason—emotion—will—progression—truth) was evaluated more mildly than it would have been in the case of a proletarian girl less exposed to such influences; in the drawing interpretation she was rated milder than she was rated in the Rorschach test, where she was described as a naricissistically disturbed personality on the borderline of psychosis. She was described as an extraordinary vain and egocentric person with confused thinking, not only by teachers but also by other people living in the college who knew her. Her academic success is unsatisfactory. Even in the case that the Rorschach should be too severe, it seems symptomatic that a personality with such dispositions feels an appeal from the symbolisms of Dali and imitates these instead of something else.

In the case that she did not imitate Dali, her symbolism becomes more significant and the rating would become worse. This is certainly a case where a blind diagnosis is insufficient, and direct inquiry would be necessary.

Another student described as highly egocentric, extremely cynical and with bad relations to people, drew only "cruel faces." These faces she drew well did not only look very cruel and disgusting, but were intended to be so. In an inquiry as to what subjects she liked best to paint or draw, she answered: cruel faces. (The purpose of this inquiry was to find out whether the students were inclined to draw rather what they could than what they wanted). This content in addition to being stereotyped was considered as unusual in an unfavorable sense.

The reactions considered as *above average* are those which go in the direction of combinations and simultaneous solutions and would be effective in more directions than just covering conventional ways of thinking. Simultaneity in regard to *form* attitudes was discussed in the section on *U* and proportions. In regard to content the combination of objects with others, particularly human figures to scenes could be considered as such. Scenes are not primarily and solely a result of intellectual capability but also one of imagination. There were intelligent students who made no scenes with human figures. However, the ones who made scenes with human figures in movement were highly intelligent students with creative abilities.

The most conventional contents in the free drawings and paintings were landscapes and human figures. Next to landscapes and human figures came animals, human faces, flowers, flower designs, and interiors. These contents differ not much from those of children found by Levinstein (12) and by the author (23). A few students represented motifs which were called "exciting" or "depressing" content, e.g., a fire scene or a graveyard, or an illustration to a scene by Proust: a desperate woman knocking at a door at night.

Many of these contents can be considered as having a certain meaning for the personality, but the possibility of interpreting them should not be overestimated, as there may be many influences and stimuli involved, which cannot be untangled without knowing the rational and irrational history of the individual.

However, in comparing the two great groups of students, the more introversive and those with extraversive trends, a greater tendency to reveal' the emotional content is shown in the sequences of the extraversive than in those of the introversive. And the more human figures in movement, or change in color are combined with a content, the more meaningful it is.

In the sequences of the introversive students we find to the greatest part conventional contents, mainly landscapes, furthermore flowers and flower designs and in scenes a desire to hide personal content-associations. One student emphasized this in making a sleeping self-portrait. In the sequences of the extraversive we find very often personal wishes directly expressed. For instance, a student who is humorous and enthusiastic about becoming a singer, makes a series of humorous scenes with people singing and a singing self-portrait. A passionate skier makes a winter landscape with skiing people and a self-portrait on skis. Also hate of the mother, or the father and relation to brothers and sisters, childhood phantasies and wishes to kill were often rather directly expressed, as well as feared situations. The contents of the extraversive offer some possibilities for the skillful psychoanalytically trained interpreter to fill the character-structure with flesh and blood. But without psychoanalytic procedure it is perhaps sufficient to know that they are meaningful, and to refrain from far fetched interpretations which cannot be confirmed by history.

In a sequence of a girl's pictures as well as in her Rorschach test made a short time later, pink color reactions and the content "strawberry ice cream" was several times represented. This was not interpreted but quoted in an interview with the mother. It turned out that the girl whose father was a problematic personality full of anxieties, was singing frequently over a long period of time the following song: "Mother, mother, do you see this strawberry jam on the street? Hush, hush my child, this is father overrun by a car." In the Rorschach test "ice cream" would be scored as "food" and perhaps by some Rorschach interpreters considered as "interest in food," which certainly would not cover the real emotional value of this content.

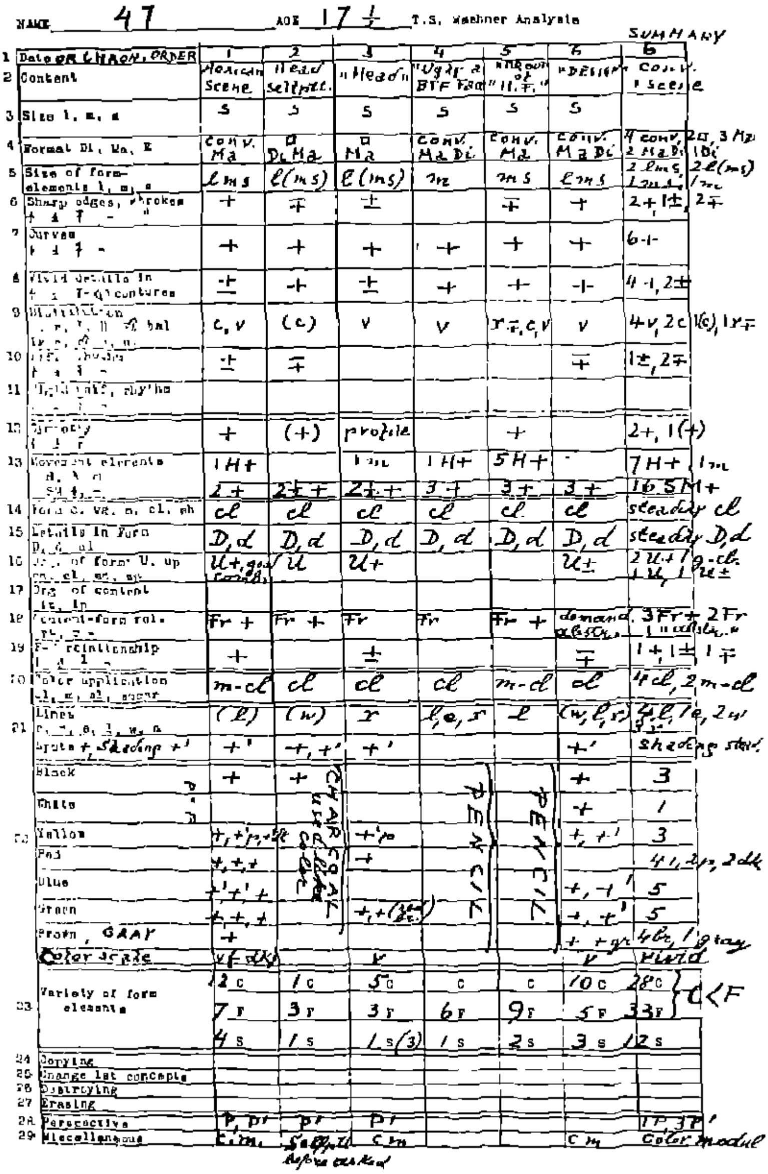
IV. INTERPRETATION (7, 19)

The practical procedure of interpretation is this: a scoring sheet (Figure 1) was used with all the form elements on the left side of the sheet and with columns for each picture. Each picture was scored according to the absence or presence and degree of each form element. Separate notes were made on particular form attitudes which could not be grasped by the scoring symbols. These chronological scoring sheets were read in horizontal and vertical direction: the horizontal allowing to judge the consistency and steadiness or change of a form attitude, the vertical direction to grasp as much as possible of the totality of one picture, the configuration of the scoring. It is evident that the scoring sheet is thought of as a systematic help, but cannot replace the direct experience and perception of the picture.

Tentative combinations of form elements were used as a "hunch," and scorings combined with particular contents, like the self-portrait and other given tasks, were checked and considered as well as the change or lack of change in relation to the total scoring. It is most important to look for configurations. The total character structure should be borne in mind in considering single attitudes and finer details. It is often helpful to make

TABLE C

Factors of control	Extratensive factors
Small sizes	Large sizes
Di (distance from margin) emphasis of margin	*Ng* (neglect of margin)
Small form elements	Large form elements
Emphasis on center and centripetal distribution	Centrifugal distribution
Narrow distribution	Scattered wide distribution
Many curves or curved forms	Sharp edges
Preference for lines	Preference for spots
Separating colors carefully	Smearing
Clear sharp forms	Vague forms
Lack of color, avoidance of colors, low color variety	High color variety
Pale and dark color scale	Glaring color scale
Preference for black	Preference for red and yellow
Form variety greater than color variety	Color variety to form variety greater than 5:4 per picture



NAME 47 AGE 17½ T.S. Wachner Analysis

								SUMMARY	
1	Date or CHRON. ORDER	1	2	3	4	5	6	6	
2	Content	Mexican Scene	"Head" self portr.	"Head"	"Ugly & BTF Face"	"Mirror of H.F."	"Design"	Conv. Scene	
3	Size l, m, s	s	s	s	s	s	s		
4	Format Di, Ma, E	conv. Ma	□ Di, Ma	□ Ma	conv. Ma & Di	conv. Ma	conv. Ma & Di	4 conv, 2 Ma & Di	2□, 3 Ma 1 Di
5	Size of form-elements l, m, s	l m s	l(m s)	l(m s)	m	m s	l m s	2 l m s, 1 m s	2 l(m s) 1 m
6	Sharp edges, strokes + ± ∓ -	+	∓	±		∓	+	2+, 1±,	2∓
7	Curves + ± ∓ -	+	+	+	+	+	+	6+	
8	Vivid details in + ± ∓ - contures	±	+	±	+	+	+	4 +, 2±	
9	Stylization	c, v	(c)	v	v	r∓, c, v	v	4 v, 2 c	1(c), 1 r∓
10	[illegible] + ± ∓ -	±	∓				∓	1±, 2∓	
11	[illegible], rhythm								
12	Symmetry	+	(+)	profile		+		2+, 1(+)	
13	Movement elements	1 H+		1 m	1 H+	5 H+		7 H+,	1 m
		2 +	2± +	2± +	3 +	3 +	3 +	16.5 M+	
14	Form c, vg, m, cl, sh	cl	cl	cl	cl	cl	cl	steady cl	
15	Details in Form D, d, ul	D, d	D, d	D, d	D, d	D, d	D, d	steady D, d	
16	Org. of form U, up	U+, good compos.	U	U+			U±	2 U+, 1 U, 1 U±	1 g-cl.
17	Org. of content								
18	Content-form rel.	Fr +	Fr +	Fr	Fr	Fr +	demand abstr.	3 Fr+, 2 Fr 1 "abstr."	
19	F- relationship	+		±			∓	1 +, 1 ±	1 ∓
20	Color application	m-cl	cl	cl	cl	m-cl	cl	4 cl, 2 m-cl	
21	Lines	(l)	(w)	r	l, e, r	l	(w, l, r)	4 l, 1 e, 2 w 3 r	
	Spots +, Shading +'	+'	+, +'	+'			+'	shading [illegible]	
22	Black	+	+ CHARCOAL		PENCIL	PENCIL	+	3	
	White						+	1	
	Yellow	+, +' pr, + lt		+' pr			+, +'	3	
	Red	+, +, +		+				4 l, 2 pr, 2 dk	
	Blue	+' +' +					+, +'	5	
	Green	+, +, +		+, +(3rd)			+, +'	5	
	Brown, GRAY	+					+, + gr	4 br, 1 gray	
	Color scale	v + dk		v			v	vivid	
23	Variety of form elements	12 C	1 C	5 C	C	C	10 C	28 C	C<F
		7 F	3 F	3 F	6 F	9 F	5 F	33 F	
		4 S	1 S	1 S(3)	1 S	2 S	3 S	12 S	
24	Copying								
25	Change 1st concepts								
26	Destroying								
27	Erasing								
28	Perspective	P, pr	pr	pr				1 P, 3 P'	
29	Miscellaneous	C.m.	Self-portr. before asked	C m			C m	Color modul	

FIGURE 1

after the experiment a "testing the limits." For instance, when in the sequence color is lacking, to ask for a picture in colors; when all the pictures are small, to ask for a large one, etc.

The form elements can be grouped in two categories, those which seem to be in correlation with lack of control, or control and those which seem to be less directly dependent on control. These groupings were used to get a general picture of the richness or onesidedness, expansiveness, constriction, the whole dynamic and special peculiarities of a personality.

The most essential of the form elements are listed in Table B according to their significance in regard to extraversion and control.

The actual interpretation was achieved by considering the following points: (*a*) the total configuration, particularly comparing introversive factors versus extraversive ones; (*b*) each single attitude; (*c*) the most significant deviations from the average, general adjustment rating; (*d*) the attitude most striking in the sequence; peculiarities; (*e*) similarity and contrasts, steadiness and vascillation of attitudes; (*f*) changes of otherwise consistent attitudes in combination with particular contents.

These points were considered systematically one after another but in relation to each other. In the course of scoring one acquires enough of a general idea of a case to prevent an undue isolation of single elements.

In Table *D* the form elements and configurations most successful in interpretation are shown.

TABLE *D*

Intelligence

Ma with balance, high percentage vivid distribution, sharp or clear form with *U* plus or high *U* percentage, more than three-form variety, *Fr plus, many* details or few but essential details, *H plus.*

Abstract thinking: *U plus,* combinations with *H plus*	Lin. Persp. and shading
Concrete thinking: Many large and small details	
Observation thinking: Clear form and realistic form	

Superior Emotional Balance

Color variety 3-6, relation of form to color about *5C:4F,* both vivid and shaded colors, little brown, some edges and many curves, high *U* percentage, high *SM* percentage, shading and linear perspective very frequent.

Compulsion

Many rigid distributions, narrow distribution, rigid uniform rhythm, rigid contours, geometrizations of organic forms, no *Fr,* avoidance of colors, preference for black.

Passivity

Sometimes wide distribution, no or few edges and many curved forms (productive introversive) *H minus,* low color variety, pale color scale, or no color.

Control

Small sizes, small form elements, *Di,* narrow distribution, sharp forms, small details without medium and large ones, form variety greater than color variety or lack of color.

TABLE *D* (*continued*)

Constriction

Small variety of all form elements, small sizes, small color variety or avoidance of colors, small form elements, rigid distribution.

Constriction with Academic Success

(1) Superior: many rigid lines, high *SM* percentage, high *H* percentage symmetry, 1-2 rigid distributions, many details.

(2) Average: lower *SM* percentage, small form elements, *Di*, form variety greater than color variety, narrow distribution or rigid contours or rigid lines.

Constriction with no Academic Success

High percentage of animal content, but *A minus* (in addition to above mentioned factors of constriction).

Depression

Slowness (?), small sizes, symmetry, small form elements, sharp forms, minutious details, black.

Sensitivity

Shading; shading of colors; moodiness with dark color scale or shifting of colors; vulnerability with many edges and many curves, sometimes wide distribution; explosiveness with inanimate movement and red dominance.

Impulsiveness

Fr minus, H minus, high or poor color variety but glaring color scale without modulation of colors (frequently red dominant) combined with inanimate movement or many edges.

Aggression

Ma-Ng? Sometimes short little strokes; few curved forms and many sharp edges, *H minus* (sometimes many *H*), sometimes animal stereotypy.

Decisiveness

Sharp forms and high color variety, bright color scale.

Impetus, productivity

Many edges and many curved forms, high form variety, but color variety much higher than form variety.

Infantile, flighty, regressive trends

High percentage of animals as content, preference for large sizes, emphasis on framing; sometimes wide distribution; scattered distribution; no *Fr*, geometrizations, high percentage of center distribution.

Introversion

Besides the factors already shown in particular high amount of secondary movement elements, especially high percentage of vivid details in silhouette with preference for linear expression, high amount of curved forms and no edges, or few.

Creativeness

Vivid distribution, few sharp edges and many curved forms, organic forms, sometimes expressionistic forms, linear perspective and shading, vivid details in silhouettes, in general high percentage of secondary movement elements, no lack of colors, *U*+.

Originality

Unusual formats, high *SM*, particularly vivid details in silhouettes; scenes with favorable configurations, excellent *U* plus, original *Fr* (definition of original *Fr* cannot be given, must be acquired in experience with material of different age and environmental groups).

Conventionality

Conventional formats, symmetry; landscapes and content reflecting environment.

Queerness, confusion, schizophrenic trends

Unusual formats, short little strokes, scattered distribution, unrelated details or scribblings with symbolistic meanings, consistent geometrizations, perseveration of forms, no *Fr*, excess or lack of colors.

Schizoid types and productive schizophrenics

Unusual formats, vivid distribution, *U plus*, perspective human figure as predominant content, high *H plus* percentage with high *SM* percentage, black dominant, avoidance of colors.

This experiment shows that there are certain possibilities and certain limitations to interpretation of drawings and paintings. Those who are going to use this method should be warned: this method cannot be used without understanding of dynamic psychology, that is not without understanding also the conditions and limitations of dynamic psychology, and not without experience with the material.

Unfounded and over-emotional "intuition" of the interpreter and the desire to find *à tout prix* an interpretation can do as much injustice to a personality as lack of intuition and over-simplified mechanical application.

Besides that a number of reactions of these experimentees have to be considered probably as such characteristic for the particular cultural group coming from their particular environment, a problem dealt with by Norman D. Cameron (5). The basic criteria, however, will remain the same. They were used successfully for analyzing drawings by different ages and cultural groups. This emphasis on the limitations is not so much caused by the smallness of the statistical data, but because science can find no law which works with 100 per cent correctness, and needs always change and modification. There will always remain a possibility of making a thorough mistake and of discovering new relations.

It is evident how much this method of interpreting owes to the Rorschach method. My own fundamental ideas were conceived years ago as the result of observation of cases; subsequently I became interested in the study of the Rorschach method. One may ask what results may be gained beyond those achieved by the Rorschach test. In regard to this and similar questions, which may come into one's mind, I want to emphasize that I by no means believe that the Rorschach test should be replaced by my method. On the contrary I believe the latter will be most fruitful when used in conjunction with Rorschach tests. Whereas the Rorschach test gives a cross section through the individual's personality structure by a comparatively short procedure, the study of spontaneous drawings consistently extended over a long period of time, though more objective and exact than mere observation of behavior, can give a picture of an individual's developmental change. Form-analysis frequently will confirm or supplement Rorschach findings. It may substitute the Rorschach in cases of retarded speech development. It may be used by the anthropologist dealing with people whose language is not perfectly known to him. Finally but important, a comparison of Rorschach tests with form-analysis of spontaneous drawings promises findings valuable for the understanding of the inner dynamic of the Rorschach performance.

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PREFERENCES FOR SEX SYMBOLS AND THEIR PERSONALITY CORRELATES*

Department of Psychology, University of California

Kate Franck

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KATE FRANCK

Department of Psychology
University of California
Berkeley, California

I. INTRODUCTION

Working on a research problem in a related field, the writer was struck by many indications pointing to the great importance of the Freudian concept of identification, a process by which a child's personality is influenced by the desire to resemble one or both of his parents.[1] This earlier research problem, a study of optimism (20), dealt with confidence in the self and in the environment. Results seemed to indicate a correlation between such confidence and "certainty of sex rôle," defined as awareness, and acceptance, of own body functions and of those of the complementary sex. How the assurance of sex rôle comes to be established in some individuals and not in others seemed to depend mainly upon the kind of identifications formed in early childhood with both parents. From the data obtained it seemed as though those men who were optimistic or confident were more clearly identified with their fathers and more masculine than the less confident men, and the more confident women seemed more clearly identified with their mothers and more feminine than the less confident ones.

However, the results were not clear cut. The relationship among identification, personality, and sex rôle appears a triangular one: identification determines (at least in part) sex rôle and personality structure; the latter may be regarded as depending largely on both sex rôle and identification. A graphic description may help to make these relationships clear (Figure 1). In terms of this graph, the optimism study shed some light on the side *b-c*

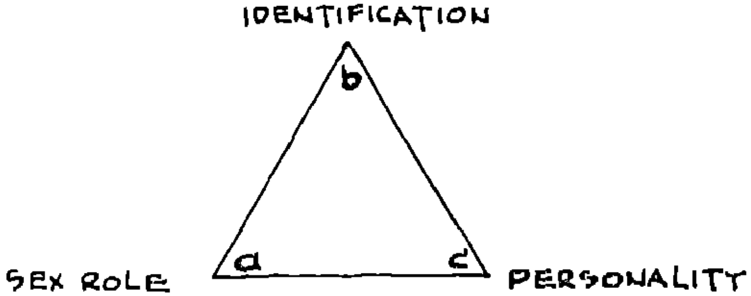

FIGURE 1

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[1] Ferenzei, in 1909, introduced the term *introjection*, which Freud took up in his Introductory Lectures, 1913. The process of introjection results in identification, defined by Freud in *New Introductory Lectures* in 1933 as "a process as the result of which one ego becomes like another ego, and its behaving in some respect like this other ego."

of the triangle and it suggested a connection *a-b.* To explore *a-c* more thoroughly, a scale of masculinity and femininity is, of course, the first requirement. Available masculinity-femininity scales, as best represented by the Terman-Miles (21) scale and by the Carter (2) adaptation for masculinity-femininity of the Strong *Vocational Guidance Test,* measure manifest preferences, interests, and behavior as they are dictated to men and women in this culture by tradition, mores, and economics. Such scales assign scores to behavioral items according to their statistical position along a scale, found empirically, which extends from exclusively masculine to exclusively feminine manifestations. Overlap on the Terman-Miles scale varies more with social group than with any other factor,—while it is known that parent identification, although not independent of social group, is certainly more dependent upon other factors. We may say, then, that available scales indicate an individual's position within his society rather than his feeling of his own body and body functions or his anticipation of the body and body functions of the complementary partner. Nor can such scales touch upon his desires and anxieties in this area or mobilize his most immediate defenses. Observation of sexual behavior being precluded, symbolic representation of sex, one's own and the opposite, is perhaps the best way to elicit behavior directly indicative of latent sex orientation for the purpose of studying such behavior.

One approach to the problem of sex differences on a non-verbal level has been successful with children. E. H. Erikson found in his study of Children's Play Constructions[2] that the most significant differences between boys and girls lay not in the frequency of use of certain toys (or contents) but rather in their spatial arrangements and configurations. He found that it is common for preadolescent boys (and for a minority of girls) to emphasize "the height and exterior elaboration of structures; violent and dangerous locomotion"; and their opposites: "arrested locomotion; the break-down of buildings."

It is significantly more common for preadolescent girls (and for a certain minority of boys) to emphasize "the openness and peacefulness of house interiors (often without surrounding walls); static arrangements"; and the opposite: "high, thick walls; intruding objects."

---

[2] The research was done as part of a larger project in the Institute of Child Welfare, under the direction of Dr. Jean Walker Macfarlane, which uses for observations a representative sample of Berkeley children from birth to adolescence. For the observation of play configurations the children were asked to construct "an imaginary movie scene."

Erikson sees a correspondence between these subverbal spatial relations on the one hand and the morphology and modes of function of the sex organs on the other, i.e., exterior location and intrusive mode in the male, and interior location and inceptive mode in the female. He concludes that, at least in this preadolescent period, spatial expression is largely dominated by psychosexual differences. Erikson points out that he found great variation, much apprehension and overcompensation; but that in spite of all this, the configurations were specific enough to accord with the general trend (4).

These findings, indicating that in children at least an unconscious knowledge of body structure and sex function manifests itself strongly and clearly, gave the writer hope that it might be possible to produce corresponding manifestations in adults, and that such manifestations could be used as a measure of the degree to which a given individual conceives of himself as a man or a woman, and of his attitudes towards his sex and its functions.

The procedure chosen on the basis of such reasoning and the results it yielded will constitute the major portion of this paper. It should be mentioned at this point, however, that this first approach has not as yet yielded satisfactory results. No clear measure of masculinity-femininity has so far been obtained, and no clear evidence for degrees of identification will be presented. It will be claimed merely that with a technique as independent of verbalization and of learned material as children's play constructions, relationships between attitudes toward sex symbols and other kinds of behavior can be established; that this can be interpreted as a relationship between sex attitudes and personality structure; that the present findings may present one link, heretofore missing experimentally, between sex rôle and personality; and that in this way perhaps a connection can be established between *a-c*, as it appears in Figure 1.

II. PROCEDURE

Since it is difficult if not impossible to bring an adult to produce spontaneous material analogous to the child's play construction, it was necessary to devise a procedure whereby prepared material could be presented to groups of subjects whose reactions to these stimuli could then be scored and evaluated. For this purpose nine pairs (Figures 2-6) of pictures were prepared, representing sex symbols.[3] Each pair consists of one male and one female symbol, matched as closely as possible for degrees of darkness and lightness, area covered, techniques employed, and for general aesthetic value. None of these factors can be considered as completely eliminated, but it can safely be stated that the pictures in any given pair differ greatly only with regard to their content, and that they differ less in other respects. It was assumed that readymade pictures, unlike play constructions, would usually represent an environmental stimulus requiring a response, rather than an expression of own body feeling as might have been the case had the subjects themselves drawn pictures.

Considering the pictures as environmental stimuli, it was hoped the subjects would react to male symbols as they tend to react toward men and to female symbols as they tend to behave toward women. Therefore they were asked, for each pair, to note which picture attracted them more. ("Attract" was considered less likely to invite value judgments than "prefer," and more likely to produce immediate emotional reactions.) It was assumed that in this way those women with more female identifications would allow themselves to be attracted by the male symbols and that the opposite would be true for men.

Subjects were a group of students in an elementary psychology class. Each pair of pictures was presented for 10 seconds. The students were asked to make a note of their preference in each case. "Mark which attracts you most, *A* or *B*" were the only instructions given.

The picture test was followed by a personality questionnaire which had been designed to bring out information in seven major areas:

Ia. Physiological Data

To indicate, if possible, relationship to own body.

I. Behavioral Data

To indicate consistency of, or conflict with, overt behavior and underlying personality.

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[3] It was fortunate that the writer could interest in this project a painter whose academic and psychoanalytic background made him singularly suited for the problem at hand and who coöperated generously in producing the pictures.

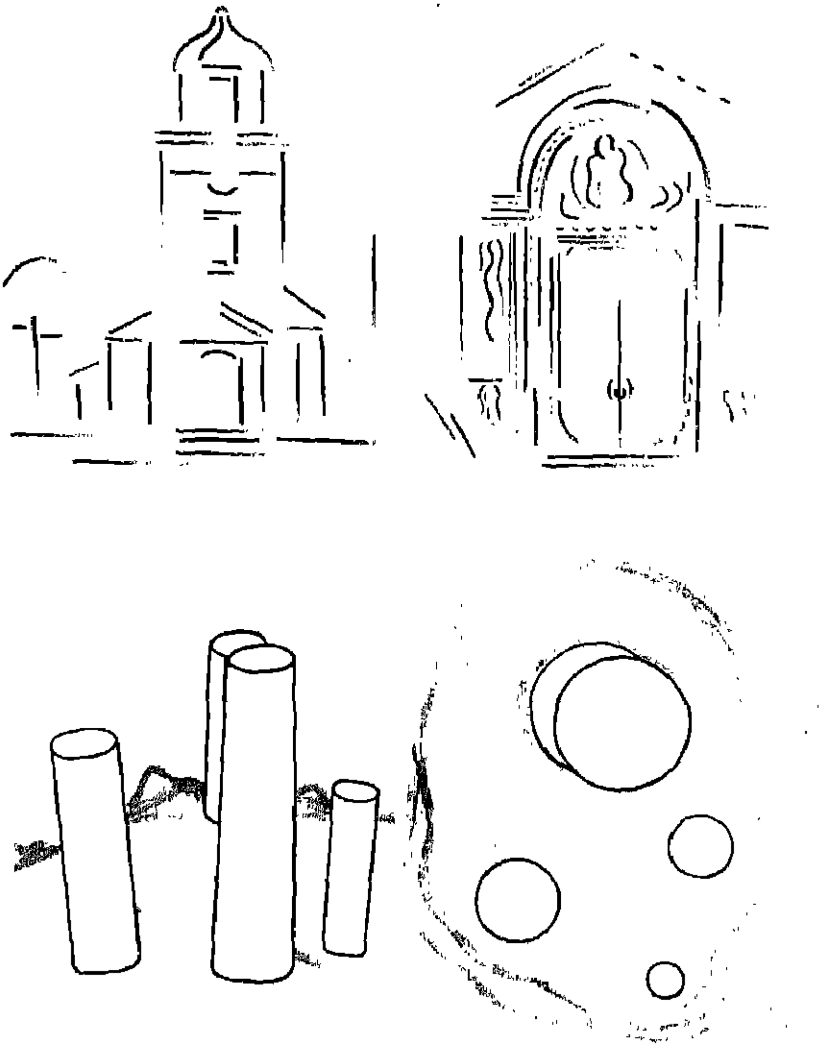

FIGURE 2
Pair 1 above; *A* left, *B* right
Pair 2 below; *B* left, *A* right

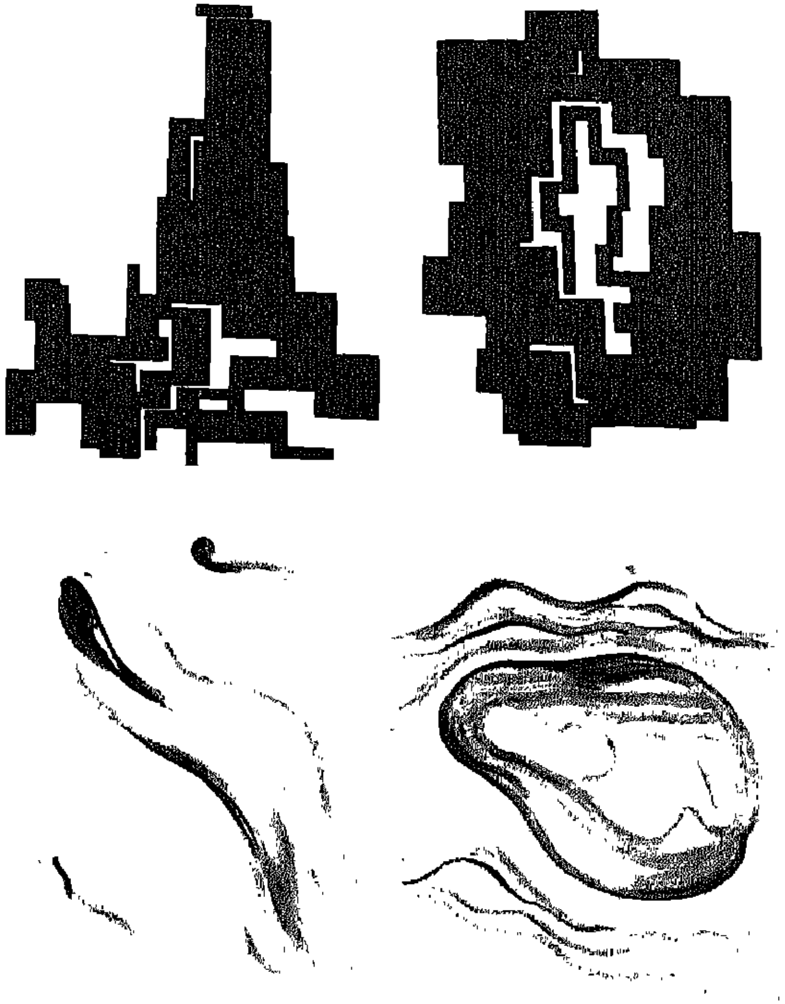

FIGURE 3
Pair 3 above; *B* left, *A* right
Pair 4 below; *B* left, *A* right

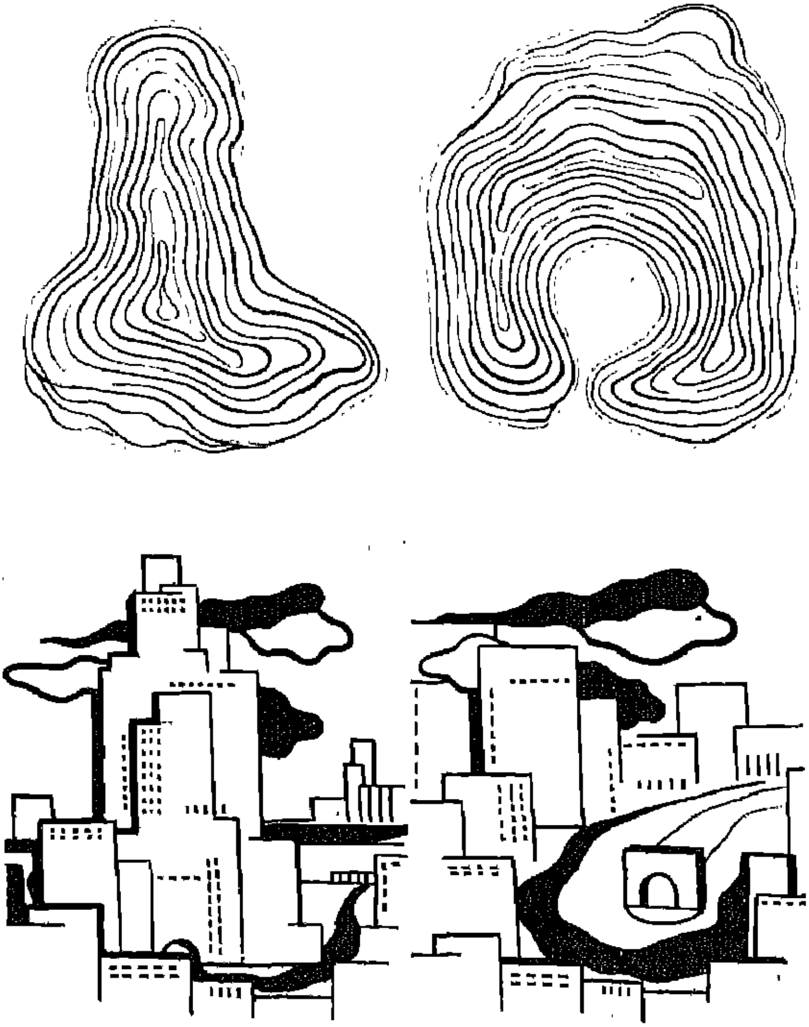

FIGURE 4
Pair 5 above; *A* left, *B* right
Pair 6 below; *B* left, *A* right

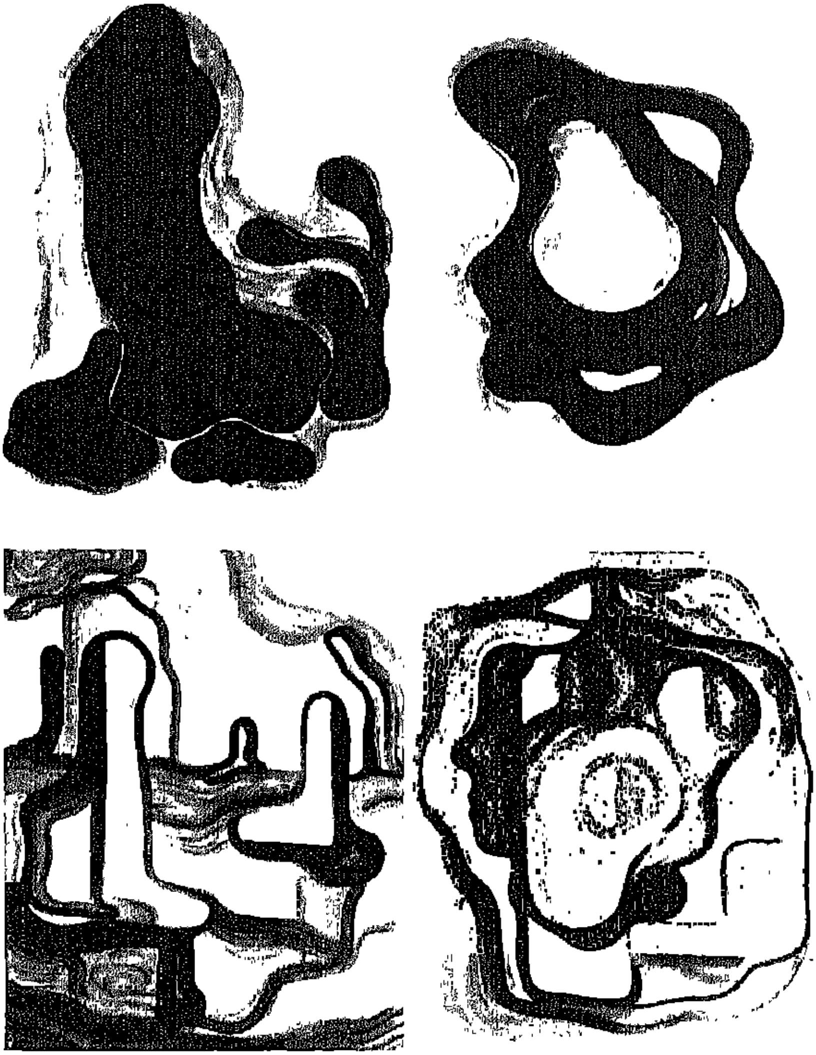

FIGURE 5
Pair 7 above; *A* left, *B* right
Pair 8 below; *B* left, *A* right

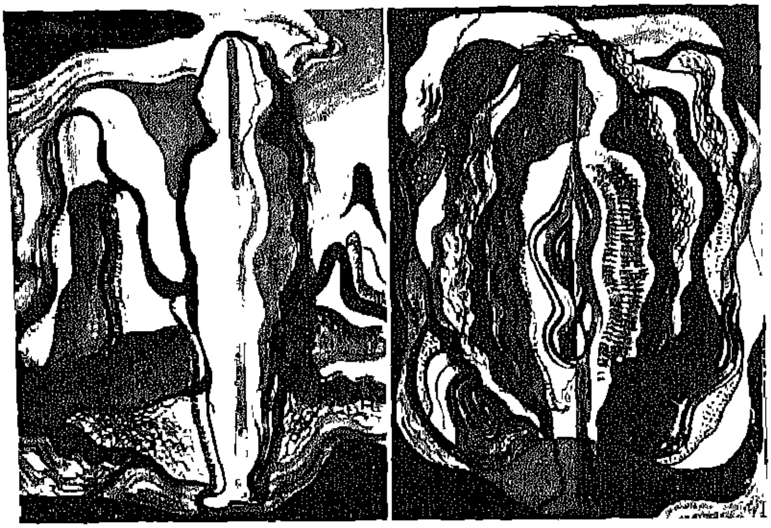

FIGURE 6
Pair 9; *A* left, *B* right

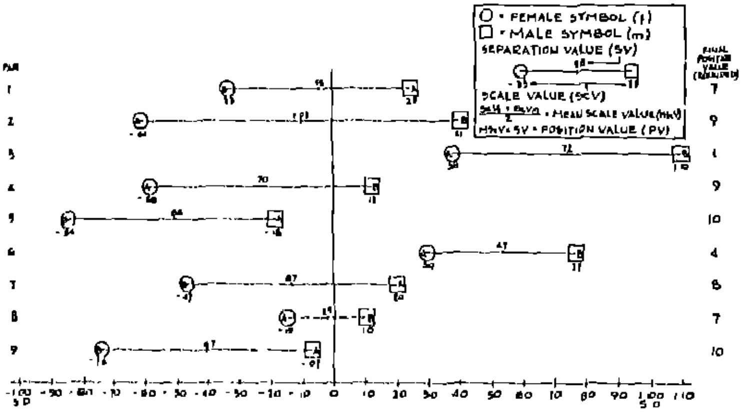

FIGURE 7
Location of Each Symbol-Pair as Derived by Converting Proportion of Judgments "Masculine" Into Sigma Units Under the Normal Curve

II. Ego Ideals and Religion

To indicate ego strength or weakness.

III. Superego

To indicate degree of integration of identifications.

IV. Parent Relationships

To be used as explanation and evidence for the reasoning underlying the present study.

V. Fears and Annoyances

To tap anxieties and defenses.

VI. Wishes and Desires

To tap repression or acceptance of id-tendencies.

Thus the questionnaire data form the basis of what relationships can be established between reaction to sex symbols and personality.[1] Since the present investigation will limit itself to this task, findings from these data and their interpretation will make up the main body of this paper.

---

[1] For sample questionnaire see appendix.

III. METHOD OF EVALUATION

Even though the painter had intended his pictures to represent male and female sex symbols, evidence was needed that they were actually seen in such a manner. It was important also to have some measure of the degree to which a male symbol is more masculine than its female mate. A third question raised was whether some pairs were felt to be more masculine than others.

To answer these three questions, a group of 24 students served as judges in a paired comparisons demonstration. Each of the 12 pictures was presented with every other picture and the students were asked to check which one they thought was more masculine.

From the distribution of judgments thus obtained resulted the rank order shown in Table 1.

TABLE 1

Picture	Intended sex	% judgments "masculine"
3*B*	male	86
6*B*	male	78
3*A*	female	65
6*A*	female	62
1*A*	male	60
7*A*	male	58
9*A*	male	47
5*A*	male	43
1*B*	female	37
7*B*	female	32
9*B*	female	23
5*B*	female	20

In Table 2 male and female symbols have been arranged in separate rank orders.

TABLE 2

Male		Female	
Picture	% "masculine"	Picture	% "masculine"
3*B*	86	3*A*	65
6*B*	78	6*A*	62
1*A*	60	1*B*	37
7*A*	58	7*B*	32
9*A*	47	9*B*	23
5*A*	43	5*B*	20

From this table it can be read that the rank order correlation is perfect and that each male symbol is considered "masculine" more often than its female counterpart. Thus the question as to the relative masculinity of the male symbols (or the relative femininity of the female ones) is answered. The overlap between pairs, that is, the fact that the female symbols in some pairs (3, 6) have more votes "masculine" than the male symbols in other pairs, has little or no effect on the results since the pairs were held constant in the actual experiment, and since they were presented one at a time.

To answer the second question, how much more masculine than its female partner is any given male symbol, "separation" values were assigned the individual pairs. The percentage judgments "masculine" were expressed as deviates under the normal curve in *SD*.[5] Subtracting the value obtained for the female symbol in each pair from that obtained for the male one the separation value was obtained, as seen in Table 3.

TABLE 3

Pair	Separation value
3	.70 called 7
6	.47 called 5
1	.58 called 6
7	.67 called 7
9	.67 called 7
5	.66 called 7

This table shows that the female picture in Pair 6 is not as different, with regard to femininity, from its partner as that in Pairs 3, 7, 9, 5. It is necessary to consider this fact when assigning scores to the actual choices made by the experimental group, since possibly choices from Pair 6 are harder to make and may depend on chance more than those from Pairs 3, 5, 7, 9, and when made they may be less meaningful.

The third question: how male is each given male symbol as compared to the other male symbols, or each female symbol as compared to the other female symbols, is answered by a scale value assigned each pair of symbols. The midpoint between the two values obtained for any given pair, as expressed in terms of standard measures under the normal curve, is this scale value, as given in Table 4.

To obtain for each symbol a value expressing absolute scale position and separation from its counterpart, each separation value was multiplied by the corresponding scale value after all male symbols had arbitrarily been designated "+" and all female symbols "—." Values obtained in this way were called position values. Results are given in Table 5.

---

[5] The chart, Figure 7, illustrates the procedure described.

TABLE 4

Pair	Scale value
1	—1
3	+8
5	—5
7	—2
9	—5
6	+6

TABLE 5

Symbol	Separation value	×	Scale value	Position value
		Male		
1*A*	+6		—1	— 6
3*B*	+7		+8	+56
5*A*	+7		—5	—35
6*B*	+5		+6	+30
7*A*	+7		—2	—14
9*A*	+7		—5	—35
		Female		
1*B*	—6		—1	+ 6
3*A*	—7		+8	—56
5*B*	—7		—5	+35
6*A*	—5		+6	—30
7*B*	—7		—2	+14
9*B*	—7		—5	+35

TABLE 6

Picture	Position value	—66		Divided by 10 and rounded
		Male		
1*A*	— 6		— 72	— 7
3*B*	+56		— 10	— 1
5*A*	—35		—101	—10
6*B*	+30		— 36	— 4
7*A*	—14		— 80	— 8
9*A*	—35		—101	—10
		+66		
		Female		
1*B*	+ 6		72	7
3*A*	—56		10	1
5*B*	+35		101	10
6*A*	—30		36	4
7*B*	+14		80	8
9*B*	+35		101	10

To make handling of these values less clumsy, 66 was added to all female position values, and subtracted from all male position values, thus making all of the former positive, all of the latter negative values. The results were then divided by 10 and rounded to be used as final score units, as seen in Table 6.

The score assigned to each individual was the sum of the final position values of all the female symbols he or she chose. (Since male and female scores are mutually exclusive, no score was actually assigned the male choices.) The scale obtained in this way extends from 0 (in case no female symbol was chosen) to 40 (in case only female symbols were chosen).

To test presence or absence of any relationship between preference for one or the other type of symbols and responses on the personality questionnaire the Chi Square method was employed.[6] The group was divided roughly into two halves which were then compared with regard to their responses to the various items on the questionnaire. The number of cells used varies according to the categories demanded by the responses to the various questions.[7]

To avoid repetition these categories and the rationale behind them will be discussed in the next section.

---

[6] Formula $\chi^2 = \frac{\Sigma(fo - fe)^2}{fe}$.

The Chi[2] method is employed where it is desirable to obtain a measure of the significance of the differences between a set of observed frequencies and a set of frequencies to be expected if chance alone had operated (18). In the above formula

fo = observed frequency
fe = expected frequency

It can be determined from Fisher's tables how often a given Chi[2] value can be expected on the basis of chance alone. If an obtained Chi[2] value had a probability of .05 or less (i.e., if it could be expected to occur by chance 5 times or less in 100), it was considered "significant."

[7] In the case of all 4-cell tables the Yates correction for small N was used, as suggested by Fisher (6).

IV. RESULTS

Out of the 42 items tested by the Chi^2 method, 16 resulted in probabilities (that the result might have occurred by chance) of 5 per cent or less. Four more show probabilities of less than 10 per cent, the rest are higher. Discussion of actual findings will be based exclusively on the 16 significant items. The distribution of the significant items among the item groups is given in Table 7. Because each such group can be considered as a subscale in itself, it is important to note, from the interpretative point of view, what groups of items were found most productive.

TABLE 7

ITEM GROUPS RANKED ACCORDING TO PROPORTION OF SIGNIFICANT ITEMS

	Group	Number of items	No. of items with a probability of 0-5	6-9	% of items significant on 5% level of confidence
V	Fears and Annoyances	4	—		—
I	Behavioral Data	5	1		20
Ia	"Biological Data"	4	1		25
VI	Wishes and Desires	8	2	(1)	25+
II	Ego Ideal and Religion	8	2	(3)	25+
IV	Parent Relationship	9	6		66
III	Superego	5	4		60

Probably the group "Fears and Annoyances" would have yielded better results had it not been for the difficulty of pressing the great variety of responses into a few adequate categories.[8]

Results from the individual items are given in a separate table arranged according to the group to which they belong, and in the sequence in which they will be discussed (Tables 8-9).

TABLE 8*

RESPONSES TO ITEMS AND THEIR STATISTICAL SIGNIFICANCE

GROUP Ia, "Biological" Data

Item	Question	Response	Low group	High group	Chi^2	Probability
Ia, 1	Position in family	(Only child + (youngest child	30	39	1.12	.30
		(Middle child + (oldest child	27	22		
Ia, 2	Are there any foods to which you are allergic?	(Yes	9	9	not computed	
		(No	48	52		

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[8] It is planned in the future to substitute multiple choice questions for these items.

Item	Question	Response	Low group	High group	Chi^2	Probability
Ia, 3	Are you a heavy, light, or moderate eater?	(Heavy	12	4	4.3	.03
		(Moderate, light	44	57		
Ia, 4	In conflict over food who wins, you or your conscience?	(I do	17	25	3.2	.20
		(My conscience	13	8		
		(Neither	16	12		
	GROUP I, Behaviorial Data					
I, 1	In what subject are you majoring?	(Social sciences	42	43	not computed	
		(Science	4	6		
		(Pre-Med., P. E., Nursing	7	5		
		(Art, Home Econ., Group Major	4	7		
I, 2	Do you like your major very much? Fairly well? Not so much?	(Much	31	43	1.6	.20
		(Fairly well	25	19		
I, 3	What occupation do you intend to follow?	(Masculine	9	13	1.8	.40
		(Feminine	23	17		
		(Neutral	26	30		
I, 4	What political party do you prefer?	(Republican	8	17	3.0	.22
		(Democrat and Socialist	27	30		
		(None	20	17		
I, 5	Do you have any hobby or favorite extracurricular activity?	(Sports	18	19	6.9	.03
		(Social	17	10		
		(Solitary	14	30		
	GROUP II, Ideals and Religion					
II, 1	What religion do you prefer?	(Catholic	4	4	4.7	.09
		(None and Protestant	45	56		
		(Jewish	7	2		
II, 2	Are you a church member?	(Yes	30	37	.45	.30
		(No	26	25		
II, 3	How often do you attend services?	(Regularly; often	23	26	not computed	
		(Seldom; never	33	33		
II, 4	What would you like people to say of you after you are dead?	(Social reference	14	8	3.7	.15
		(Self reference	25	37		
		(Neutral	17	17		
II, 5	How important do you think religion is?	(Very important; important to me; important to everyone	30	48	6.4	.009
		(Unimportant; not important to me	26	14		

#To facilitate reading of table it should be stated that scores of 0-11 are considered low, i.e., predominantly male symbols were selected, and that scores 12-32 are considered high, i.e., predominantly female scores were chosen. The first item above thus tells that of those girls who chose few female symbols, score 0-11, 30 are only or youngest children while 27 are middle or only children; of those girls who chose many female symbols, score 12-32, 39 are only or youngest children while 22 are middle or oldest children. The probability of .30 is to be interpreted as not significant, since the result obtained can be expected to occur by chance 30 out of 100 times.

Item	Question	Response	Low group	High group	Chi^2	Probability
II, 6	What was your favorite fairy tale when you were little?	(Mild	21	34	5.4	.06
		(Destructive	11	5		
		(None or many	23	20		
II, 7a	Give the names of great people, living or dead, whom you admire most, *men*	(Emotional contribution	17	24	2.5	.10
		(Practical contribution	24	15		
*II, 7b	Give the names of great people, living or dead, whom you admire most, —*women*	(Emotional contribution	17	29	3.9	.05
		(Practical contribution	15	25		
	GROUP III, Standards					
*III, 1	What would make you lose your self-respect?	(Offenses against social and sex mores	9	22	6.7	.04
		(Ego-deflation	12	14		
		(Offense against conscience	25	17		
III, 2	What is the worst thing that could happen to anyone?	(Physical danger and frustration of pleasures	13	12	6.4	.04
		(Ego-threats	16	28		
		(Loss of love and wrong-doing (superego)	25	14		
III, 3a	What behavior do you criticize most severely in a woman?	(Female "foibles" (identified?)	12	8	3.1	.20
		(Narcissism (projected?)	17	29		
		(Selfish and immoral threats to security	21	23		
*III, 3b	What behavior do you criticize most severely in a man?	(Offensive masculinity	13	24	7.1	.03
		(Weakness	15	6		
		(Threats to security	24	26		
*III, 4	What would you do if one of your friends was violently disliked by your mother, your father?	(Dependent attitude	20	34	3.7	.05
		(Independent attitude	32	24		
	GROUP IV, Relation to Parents					
IV, 1	Which of your parents has been your favorite	(Father	14	12	3.1	.25
		(Mother	19	31		
		(Neither	23	19		
IV, 2	Whose discipline did you fear the most?	(Father	33	25	4.4	.12
		(Mother	13	23		
		(Neither	10	14		

For examples of responses on starred items, see page 97 ff. below.

Item	Question	Response	Low group	High group	Chi^2	Probability
*IV, 3a	What irritates you in your mother?	(Pressure	19	24	7.8	.02
		(Lack of support	18	24		
		(Inaccessibility	15	4		
IV, 3b	What irritates you in your father?	(Inaccessibility	34	26	1.8	.18
		(Weakness and aggression	15	22		
IV, 4	What parent has influenced you the most?	(Father	20	9	8.4	.02
		(Mother	27	45		
		(Neither	11	10		
IV, 5	Whose discipline was most effective?	(Father	27	18	7.2	.03
		(Mother	20	38		
		(Neither	10	8		
IV, 6	Which parent set the standards for your family and was considered the first authority?	(Father	24	30	8.3	.02
		(Mother	12	24		
		(Neither	20	9		
*IV, 7a	If you were a parent what things would you try most to instill in your child?	(Ego-strength	20	8	9.7	.002
		(Ego-weakness, conformity and (projected) ideals	25	46		
*IV, 7b	If you were a parent what things would you try to discourage?	(Threats to parent's security	18	33	5.5	.02
		(Threats to child's security and to ideals	26	16		

GROUP V, Annoyances and Fears

Item	Question	Response	Low group	High group	Chi^2	Probability
V, 1	What things or situations are you most afraid of?	(Sex and physical fears	21	19	4.1	.13
		(Failures	13	25		
		(Loss of love, love object, control; guilt	15	11		
V, 2	What might drive a person "nuts?"	(Frustration: through others	31	25	1.4	.25
		through situations	13	15		
		through inner conflict or inadequacy	9	13		
V, 3	Do you ever wish to be different than you are?	(Yes	50	46	1.6	.18
		(No	6	11		
V, 4	What do you criticize most in people?	(Aggression and pressure	21	20	.6	.40
		(Selfishness and falseness	31	40		

GROUP VI, Wishes, Desires

Item	Question	Response	Low group	High group	Chi^2	Probability
VI, 1	If you were much in love, would you hesitate to marry a man: 10-15 years older than yourself? 10-15 years younger?	(Older: Yes	19	18	not computed	
		No	30	28		
		(Younger: Yes	46	43		
		No	2	3		

Item	Question	Response	Low group	High group	Chi[a]	Probability
VI, 2	At what age do you expect to marry?	(Under 20	8	6	1.8	.40
		(20-23	19	28		
		(Over 23	25	23		
VI, 3	How many children would you like to have?	(0-2	9	14	4.04	.11
		(2-3	25	15		
		(3 plus	25	30		
VI, 4	What is the most fun to do on a vacation?	(Relax, travel	25	20	1.3	.25
		(Outdoor activities, (mountains, beach	31	41		
VI, 5	What is an experience you are most anxious to have	(Marriage and success	23	13	2.1	.12
		(Motherhood, love and (pleasure, and inclusion of others	28	20		
*VI, 6	Describe if possible in detail the situation that would hold most happiness for you.	(Marriage (alone)	12	4	7.4	.03
		(Marriage *plus* child, (home, security	18	31		
		(Achievement and (emotional gratification	22	20		
VI, 7a	Would you like to be a man in peacetime?	(Man	8	10	not computed	
		(Woman	45	44		
VI, 7b	Would you like to be a man in wartime?	(Man	20	5	10.9	.001
		(Woman	25	40		

TABLE 9

EXAMPLES OF RESPONSES TO ITEMS FOUND STATISTICALLY SIGNIFICANT

GROUP I, ITEM 5: (Extracurricular activities)

Sports	*Social* (L)	*Solitary* (H)
Tennis	Dancing	Sewing
Swimming	Bowling	Reading
Archery	Shows	Music
etc.	Conversation	Collecting
	Church	Gardening
	Bridge	
	Bull sessions	

GROUP II, ITEM 7b: (Great men and women)

Emotional contribution (H)		*Practical contribution* (L)
Religious figures		Scientists
Creative figures		Political leaders
Heroic figures		
(Edith Cavell	versus	Sister Kenny)

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[a] (L) = Low, (H) = High, indicate the group of which the responses in a given category are more typical.

GROUP III, ITEM 1: (Lose self-respect)

Offense against sex and social mores (H)	*Ego-deflation*	*Offense against conscience* (L)
Prostitution	Dependence	Act against own standards
	Receive charity	Act against conscience
		Act against principles
		A coward when needed
		Dishonesty
		To stray from God
		Narrow-mindedness

GROUP III, ITEM 2: (Worst thing)

Physical danger, etc.	*Ego-threats* (H)	*Loss of love and wrong-doing* (L)
Be crippled	Failure	Death of a loved one
Illness	To be ignored	Loss of friends
Lingering death	Insanity	Do a wrong to mankind
Torture	Solitary confinement	Go against own standards
Persecution	To lose self-respect	Lose interest in others' welfare
Not to get the most out of life	To be socially ostracized	Mental torture
	To lose faith in self and everyone	

GROUP III, ITEM 3b: (Criticize in men)

Offensive masculinity (H)	*Weakness* (L)	*Threat to security*
Conceit	Weakness	Thoughtlessness
Show-off	Stupidity	Egocentrism
Pompousness	Femininity	Lack of sympathy
Obscenity	Irresponsible	Harshness
Arrogance	No high ideals	Crudity
Vulgarity		Aggression
"Male" behavior		Dishonesty
		Deceit
		No respect for women
		Ungentlemanliness
		Insincerity

GROUP III, ITEM 4: (Parents dislike friend)

Dependent attitude (H)	*Independent attitude* (L)
Give up friend	Disregard parent
Compromise	Convince parent
Revaluate	Do nothing
Keep them apart	

GROUP IV, ITEM 3a: (Irritates in mother)

Pressure (H)	*Lack of support* (H)	*Inaccessibility* (L)
Nagging	Sentimental	No understanding of D
Stubborn	Masochistic	No interest in D
Meddling	Emotional	Selfish, inconsiderate
Dominating	Not objective	Sulks
Criticism	Self-pity	Lack of affection
Possessive	Childish	Absentminded
Overprotective	Indecision	Religious prejudices
Curious	Romantic	Getting fat
Conventional	Depends on D	Talks about minor things
Violates D's independence		Laughs at D

GROUP IV, ITEM 7a: (Instill in child)

Ego strengthening (L)	*Ego weakness, conformity and (projected) ideals* (II)
Independence	Good reputation
To take care of self	Good behavior
Independent judgment	Good manners
Self-reliance	Courtesy
Sense of humor	Tolerance
Desire to learn	Sportsmanship
Courage	Love of beauty
Self-confidence	*Honesty*
	Obedience
	Respect of parent
	Respect of mother
	Respect of religion

GROUP IV, ITEM 7b: (Discourage in adult)

Threat to parent's security (II)	*Threats to child's security and ideals* (L)
Deceit	Dependence
Cruelty	Timidity
Spoiling	Fear
Disrespect	Inferiority
Standing up for own rights	Intolerance
False pride	Prejudice
Overcriticalness	Disloyalty
	Wishy-washyness

GROUP VI, ITEM 6: (Situation holding most happiness)

Marriage (II)	*Marriage plus* (L)	*Achievement and emotional gratification*
Marry boy friend	Home and husband	Father be well
Marriage	Husband, child, home	Mother secure
Honeymoon	Marriage and a career	Meet Jesus
Married to fiancé	Marriage and church work	Success for father
	Marriage and political work	Understand father
	Marry and teach	Be respected and contribute
		To travel
		Go home
		Be a psychiatrist

V. DISCUSSION

The data presented in the preceding section serve to corroborate what was claimed in the introduction: that relationships can be established between attitudes toward sex symbols and other kinds of behavior, in this case responses to certain items on a questionnaire. It was also suggested there that findings of this kind can be interpreted as relationships between sex attitudes and personality structure, a statement not verifiable by statistics alone, for these deal only with behavior in answering questions on a questionnaire. Corroboration will have to come from internal evidence, mainly the coherence of what findings have been made and the way the various phenomena fit one theoretical explanation. Before such an integration of all findings can be undertaken, however, it seems advisable to discuss possible implications of the single findings within each group.

ITEMS GROUP IA, "BIOLOGICAL DATA"

The first group of items proved rather a surprise: differences were expected on the "allergy" item, allergies being supposedly in part of psychogenic nature; but differences were found on the "heavy eater" item instead. It is, of course, impossible to say whether those subjects who think of themselves as heavy eaters actually eat much. A reasonable inference is, however, that they enjoy eating, and that they have a healthy appetite. Of the 16 "heavy eaters" 12 belong to the low group.[9] Whether they tend to be "oral types" or just persons who preserved their capacity for id-pleasures is undetermined thus far. (Other factors connected with physiological make-up may possibly enter here which could not be explored within the framework of the present research.) It is regrettable that the item "conflict over food" did not yield any result which might help to interpret data from the other item.

ITEMS GROUP I, "BEHAVIORAL DATA"

No significant differences were found with regard to college major and liking or dislike for college major. Nor did intended occupation yield any indications. Considering that the Terman-Miles *M-F* scale is heavily loaded with preferences for activities and occupations, this seems remarkable. It emphasizes the difference between a scale of masculinity and femininity as conceived by cultural norms and a scale intended to tap underlying sex attitudes.[10]

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[9] The terms "low group" and "high group," which will be used frequently, always refer to the score groups as used for the Chi^2 tests, that is, "low group" refers to scores from 0 to 11, "high group" to those from 12 to 32. Or: "low group" = those girls that preferred relatively more male symbols.

Preference for political party showed no significant differences, at least in terms of the Chi^2 test. It is interesting to note, however, that among the 27 lowest cases (one-half of the low group, or most of the lowest quartile) there is not a single Republican preference: 10 prefer the Democratic, 5 the Labor parties, 12 have no preference—this as against 8 Republicans in the high group. Of course, no conclusions can be drawn with certainty from such an incidence. It is planned, however, in the near future to correlate the picture test with a political attitude scale.

In this group the only statistically significant result came from the question "extracurricular activities." Both groups seem to like sports equally well, but among those preferring other activities, three-fourths of the high group prefer solitary activities, while less than one-half of the low group do so. No indication can be found that either group prefers activities that are more feminine than those preferred by the other group.

ITEMS GROUP II, "EGO IDEALS[11] AND RELIGION"

This group of items, designed to get at ego ideals as one manifestation of identification, is one step removed from overt and tradition-bound behavior. A slightly closer approach to latent personality may explain why somewhat better results were obtained from this group of items than from the preceding ones. Preferred religion, church membership, church attendance—those items within this group concerned most with manifest behavior—yielded nothing. "What would you like people to say of you after you are dead?" gave no statistically significant differences. However, there is some evidence of a slight trend in the high group toward more self reference, and this may eventually be brought out if the item is rephrased as an alternate choice question.

The question about the importance of religion seems to produce closely personal rather than conventionally determined responses, for here is found one of the most significant results of the present research. There is a definite trend in the high group to rate religion very highly, and a trend toward indifference in the low group. It is suggested that here is a first indication of a somewhat dependent, support-seeking attitude among the high group, as opposed to a self-reliant, confident, or independent attitude in the other group. The item on fairy tales seems to support such an interpretation. The tendency to prefer "mild" stories in the high group may be taken to indicate a need "to be good," much like the need to be religious, while in the low group many individuals can be found who do not have to be afraid of aggressive feelings, perhaps because they can handle them well.

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[10] However, the possibility should not be ignored that different results might have been obtained here and with some of the other questions had a sample been used more representative of college populations than the typical psychology class.

[11] "Ego ideal" may be described as "the kind of person one would like to be."

The number of names given on the item "great people most admired" indicates that, as intended, the question actually mobilizes the ego ideal: for great men only 80 responses were given by the entire group, while great women were named by 106 of the (female) subjects. Owing perhaps to the small *N*, the result for "great men" is statistically not significant, but the tendency is in the same direction as for "great women": practical contributions are preferred by the majority in the low group, while emotional contributions are preferred by the majority of the high group. This item would lead one to expect better reality adjustment in the low group, while in the high group a tendency toward escape and perhaps mysticism may be suspected, once more in keeping with attitude toward religion in this group.

ITEMS GROUP III, SUPEREGO

The superego is that part of the individual's make-up which is almost entirely brought about by identification, or—expressed more descriptively—by integration into the individual's own personality of the parents' moral standards. Considering this very intimate connection between parent identification and superego it is very interesting that from this group of data comes the largest proportion of statistically significant data.

To the question "What would make you lose your self-respect?" more than half of the low group answer in terms of offense against their own conscience, while the majority of the high group respond in terms of social disapproval and "getting found out." That the first type of conscience is better integrated with the total personality than the second can hardly be denied. Confirmation comes from the next item, "worst thing," which brings out the importance of conscience to the low group as against the fear of external threats in the high group.

With this fear of external dangers goes a fear of, or dependence upon, parents, as becomes apparent from the next question: "What would you do if one of your friends was violently disliked by your mother, your father?" There is a statistically clear tendency for the girls of the high group to allow parents to affect their friendships which is not found in the other group.

The next pair of items, asking what the subjects criticize most in men and women, curiously enough gave interesting results with regard to criticism of men while telling almost nothing with regard to women. Of course, object relationships rather than identification are called to the fore by this question, and a possibility may be kept in mind that women's relationships to other women are more complex than their relationships to men. On the other hand, inadequate classification may be the sole cause of the difference in results. In itself the table on criticism of men indicates that the high girls take offense when masculinity is too openly demonstrated, while the low group objects to weakness in men. If it is recalled that the latter are the girls who chose more male symbols, this result was to be expected.

GROUP IV, PARENT RELATIONSHIPS

It is in the nature of the present research problem that this category contains the largest number of items. It also reveals the largest number of statistically significant relationships. It may be considered as a subscale of semi-latent trends: several of the students that were later interviewed remarked that they "thought about it" and would now like to change some of the statements in this group. Such remarks were taken as indication of spontaneity of reaction in the initial response.

Two questions in this group were probably too direct or too crude. They dealt with the two apparent opposites, favorite and most feared parent. A more subtle approach should be used in the future. The pair of questions "What irritates you in your father?" "What irritates you in your mother?" brings to mind the pair in the preceding group of items which called for criticism of qualities in men and women. But results are reversed: data concerning the female sex here prove significant while those for the opposite sex do not. There is a tendency for the low group to object most strongly to inaccessibility, i.e., various forms of remoteness of both mother and father, this being clearly demonstrable in the case of the mother only. The high group bimodally objects to pressure on the one hand and to lack of support on the other, again only as far as mothers are concerned. With regard to the fathers the tendency is perhaps identical since weakness (lack of support) and aggression (which somewhat corresponds to pressure) are resented more by the high group than by the other. However, the difference is so slight that chance cannot be ruled out (probability .18). The impression formed earlier that members of this high group depend on their parents more than the others is once more confirmed: they need support from parents; on the other hand they cannot stand pressure—which may or may not stand for disapproval.

The next two items, actually touching the sphere of parental influence, perhaps comes closest to identification. ("Influence" seems to be the colloquial term for identification. An alternative might be "suggestion." It might even be that suggestion is made possible by identification: the suggesting person takes the place of the parental figure.) On both items, "Whose discipline was more effective?" and "Who influenced you the most?" the father is mentioned considerably more often by the low group than by the high one, suggesting, it seems, that many fathers in this group were stronger personalities, or were felt as stronger, than fathers in the other group, where mothers' influence prevailed.

Strong fathers are also suggested by the data on "Who set the standards?" where "mother" is mentioned by the high group exactly twice as often as by the low group. However, it is significant that the difference between the groups, as shown in this table, is not one of father versus mother predominance, but one between mother predominance in one group as against what appears to be parent coöperation in the other. Both groups give bimodal data: the high group tends to mention strong mother on the one hand, and strong father—the culturally prescribed image—on the other; the low group also tends to mention the strong father, but cases where neither parent is reported dominant are twice as frequent here as in the high group.

The last pair of items in the present group suggests conscious identification more strongly than any of the preceding. "If you were a parent, what things would you try most to instill in your child?" "What would you discourage?" yielded statistically significant as well as consistent data. Responses to both questions suggest that girls in the high group are concerned mainly with external standards on the one hand, and their own image as mothers on the other, while low group girls tend to emphasize features that equip their children well for independence and happiness.

ITEMS GROUP V, FEAR AND ANNOYANCES

From the next group of questions no statistically significant results were obtained. One item, however, may have potentialities as a multiple choice question: responses to "What are you most afraid of?" tend a little in the direction of own conscience for the low group and in the direction of fear of failure (external disapproval) for the high group. Since statistically the difference is slight, the item carries some weight only because the responses tend in the same direction as those to some of the preceding—significant—items concerning self-respect and worst thing. Responses to "What might drive a person nuts?" were extremely hard to classify, so that any existing trend remained undiscovered. "Do you ever wish to be different?" proved disappointing, and so did "What do you criticize most in people?" It is believed, however, that this negative result also may be due to the difficulty of finding adequate categories, especially since "criticize in men," "irritates in mother," two somewhat similar items, gave better results.

ITEMS GROUP VI, WISHES AND DESIRES

It was hoped that the last group of items would indicate to what extent instinctual drives were accepted or inhibited by members of the two groups. The question "Would you hesitate to marry a man fifteen years older, younger, than yourself?" was answered in very much the same way by both groups, as was also the question "At what age do you expect to marry?" where a slight tendency to marry late among the low group may or may not be due to chance. Data from "Number of children wanted" and "Fun on a vacation" also were quite insignificant statistically, although results on both items tend roughly in the expected direction: 2 to 3 children for the low girls, none or very many for the high girls; relaxation for the low group, much activity for the high group.

Probably due again to inadequate categories nothing significant was revealed by the question "What is an experience you are most anxious to have?" Differences fall barely short of being statistically significant. The next item, which is psychologically rather similar, was more successful. "Describe the situation that would hold most happiness for you" seems to show that in the low group more girls are willing to be satisfied with marriage alone, that is, with a partner and love, while in the high group marriage appears more as a means to an end: children, a home, security, status. If that is correct, this result, too, is not unexpected: the girls who chose more male symbols want the man himself; the girls who chose more female symbols—their own sex—with characteristic self-love want the advantages that only marriage can give them.

The very last pair of items to be discussed is perhaps the most revealing of all. "Would you like to be a man in peacetime" showed nothing: an equally small number of individuals in both groups expressed the wish to be a man. Therefore it is all the more striking that the responses to "Would you like to be a man in wartime?" were entirely different. In the first place, the proportion of girls responding at all is much smaller on this latter item than on the former. In the second place, the proportion of girls responding at all is smaller in the high than in the low group (70 per cent as against 80). In the third place, data from this table represent the most significant difference of all. It seems as though "wartime," with its association of need for men, had lifted a taboo for a large number of girls in the low group while it increased a conflict already existing in many of the girls in the high group. It is reasonably safe to assume that most girls at one time or another, if not all their lives, have a desire to be men. The premium our culture places on masculinity would of itself be sufficient motivation for such desires. Among those girls in both groups who want to be women regardless of war or peace one would probably find girls who, as a defense against the wish to be a man, go out of their way always to be feminine, and a number of others who have each managed to get so much satisfaction from being a woman that they genuinely prefer it. Among those who would like to be men in peacetime, but not in wartime, one would expect a large proportion of those who repressed the entire conflict without having solved it. Others, also still struggling with the old conflict, trying to be as masculine as they know how, will be found in the group who want to be men regardless of war or peace. Still others, four-fifths of whom come from the low group, would like to be men in time of war but not in time of peace. Apparently these girls would like to be men, not to gain advantages which men supposedly have in our culture, but rather to be as effective as men at a time when men are needed. One might say that wanting to be a man in wartime is prompted by a girl's wish to go out and fight side by side with her man. If that is true, such behavior would surely be most womanly—if not ladylike.

Of course, there is no easy way of proving or disproving such speculations. However, the next section will attempt to integrate all those findings which were statistically significant, and to prepare for a consistent theoretical interpretation.

VI. COMPOSITE PICTURE

Looking at the data compiled thus far, it cannot be denied that there is wide variability within each group and great overlap between the two groups on many items. However, in the present context interest is focused on the differences between the two groups. To bring out clearly such differences as were found to exist regardless of overlap, both groups will be treated in this section as though each were represented by one—fictitious—individual who responded to items on the questionnaire in the manner typical of her group,[12] and who can thus be considered as though endowed with whatever qualities led her to respond in this particular way. The fictitious low and the fictitious high girl, as seen by the writer, will each present a composite picture of her own group, the result of superimposing those features of all members of her group that are significantly more typical of this group than of the other group. In this way she will lend herself to scrutiny as a psychologically coherent unit which can be examined with respect to its degree of integration from the clinician's point of view.

A. THE "LOW" GIRL

Items I, 5; Ia, 3; VI, 6; VI, 7b; II, 7a, b. Here is a young college girl who enjoys spending her leisure time with others. She has a healthy appetite for food and for love. While a war is going on she would like to be a man and do her share, as did the great women she admires.

Instinctual drives, hunger, sex, desire to be a man, have been subjected neither to severe repressions nor to reaction formation in the form of exaggerated femininity. They find expression in their original direction, as part of the personality.

Items II, 5; III, 1; III, 2; III, 4. Religion does not mean much to her one way or another; she believes that her conscience, rather than any outside agency, helps her to tell right from wrong. But her conscience is not to be trifled with; nothing is worse than to act against it. She does not need to appease her parents; it is regrettable if they do not like her friends, but she will not let that affect her friendship.

Her superego is well integrated with the personality, it is part of everything she does, taking the rôle of a guide rather than one which threatens punishment or loss of love.

Items IV, 7b; IV, 7a; III, 3b. Being independent herself, she wants to discourage in her children anything that might tend to make them dependent. She tries to instill in them all that helps to make them strong personalities; it seems she is well aware that children love their parents better the less they depend on them. Perhaps for similar reasons she finds weakness in men hard to take.

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[12] Items with a probability of more than .05 will from now on be ignored.

Because, with her, instinctual needs and superego are part of the personality itself rather than foreign bodies, hers is a strong ego, and she feels equipped to deal with her human relationships, with her children and her husband.

Items IV, 4; IV, 5; IV, 6; IV, 3a. She would like her man strong, her married life like that in her old home, where the father was the one whose discipline and influence were most effective, but who found himself in good agreement with the mother concerning the family moral code. She would perhaps like to be a little closer to her mother but she is neither afraid of her nor in need of support from her.

Her husband then ought to be a strong personality; she is proud to see him express what masculinity she feels in herself. Simultaneously, she needs to identify with him as she once identified with her father. She can then be to her husband what her mother was to her father, and what she always wanted to be herself and probably considered her place in life.

B. The "High" Girl

Items I, 5; Ia, 3; VI, 6; VI, 7b; II, 7a, b. Here is another young college girl, devoting her leisure time to solitary, though feminine activities, like sewing or gardening. She eats without great pleasure. Her desire is not so much for a husband to love and be loved by, as for the things that go with marriage; status as a married woman. There might be another way to get these things if one were a man—but not in time of war when men have to do all the "dirty work." Women are meant for the "higher" things in life, like those great women she admires so much.

Instinctual needs, hunger and sex, seem to have been subdued in favor of those ego needs which have to do with tangible forms of security. Wishing to be a man is "wrong" and would stir up too much that has been repressed. For the genuine id pleasures of which she deprived herself, she appears to find substitutes or a form of vicarious gratification in the emotional appeal some great women's contributions have for her.

Items II, 5; III, 1; III, 2; III, 4. Religion is important to her: it makes her feel secure because it decides for her what is right or wrong. There is a judgment wiser than her own, to be followed always. Relying on this she can be sure of not getting into trouble, doing something that most people disapprove of. And to be approved of is important, for success does not come easily, and there is great danger of failure, of not being good enough. Next to God, her parents are her best guides. If they disapprove of a friend they probably have a good reason; they know best.

Her superego is a foreign body in her personality. She does what outside pressure demands of her. Fear of loss of love, approval, status, determine her actions—she allows the standards of others to direct her rather than "letting her own conscience be her guide."

Items IV, 7b; IV, 7a; III, 3b. As her own mother taught her, she will teach her child how to behave so that he is accepted by most people. She will teach him to respect his father and mother—for then she will not have to fear his criticism; he will depend on her, for better or for worse. Her husband must follow the same pattern. Should he be bold, or boisterous, she would feel quite annoyed by his demonstrative masculinity.

With much energy used for repression of id desires and more needed to satisfy the innumerable demands of a nonintegrated superego, her ego is weak, depleted. She is not sure of affection from anyone, not even from her own child—therefore she would rather control him than rely on what she has to give him. She cannot forgive a man for being a man, she has not made peace with her fate: being a woman.

Items IV, 4; IV, 6; IV, 3a. As her mother used to run the lives of both husband and daughter—in that way making him and his children depend on her as the source of strongest influence and discipline—she can proceed to set up another household run by a woman, this time herself. It will be her own ideas of right and wrong that the family will follow—all for their best, of course—for she alone knows what friends and neighbors expect; the husband's judgment had better be ignored. And, of course, when she marries she will live close to her mother so that she can visit her often, to have the guidance and support she is used to.

Her ego, weak and defensive, forces her to be on the lookout, to have everything under control, to conform without reservation; its mainstay is still her own mother.

VII. CONCLUSIONS

Results of the present investigation were given in Section IV; inferences were drawn from them in Section V; these inferences were condensed to descriptions in Section VI. It is now time to ask, What actually is the nature of an individual's decision in favor of one or the other symbol? What are the dynamics that determined the nature of his reaction? To answer the first question several alternatives offer themselves. First, girls who choose male symbols may do so because they would like to be men and therefore they tend to identify with the male symbolism; girls who choose female symbols do so because they are satisfied to be girls and in turn identify with the female symbolism. In that case both groups would have made narcissistic choices rather than object related ones. Another alternative suggests that heterosexual girls chose male symbols and homosexual girls chose female symbols.[13] In this case choices in both groups would have been determined by object relationships.[14] This second alternative, although crude and an overstatement, comes a little closer to the truth. It is modified considerably if the fact is taken into account that homosexual object choice ordinarily is more narcissistic than heterosexual choice. These narcissistic trends manifest themselves in the choice of female symbols rather than in actual homosexuality—which results in a few extreme cases only.[15]

The first alternative, that both groups made narcissistic choices, was ruled out for the low group on the basis of several items: preference for social over solitary activities; preference for great men and women who made practical contributions (of these one usually benefits in a very indirect manner only, while a direct gain is possible from those who made "emotional" contributions); objection to lack of closeness in mother and father; marriage for its own sake; desire to build up ego strength in their children; all these imply object relationships and exclude strongly narcissistic relationships, or, in other words, they emphasize "give and take" more than "take."

The second alternative, that choices in both groups were determined by object relationships, was ruled out because the very items that implied object relationships for the low group implied narcissistic trends for the high group.

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[13] As has been the practice throughout the present paper, the discrete nature of the data obtained is ignored and discussion will continue in terms of a dichotomy: those preferring male symbols and those preferring female symbols.

[14] The term "object relation" is used to describe the opposite of narcissistic relationship: love for an object which does not refer directly to any aspect of the self: e.g. the baby's love of the feeding mother's breast is primarily narcissistic, the mother's love of the baby is not necessarily so.

[15] This was asserted later in a series of interviews.

Solitary activities are preferred; emotional contributions are most appreciated; lack of support or too much pressure are hardest to endure from parents; marriage is desired because it has a number of indirect advantages. Children must be made dependent so that the parents will not need to fear losing them. Every one of these responses is a self reference to be understood only as a narcissistic defense against frustration.

Another alternative is left: the low group expressed object choices, the high group selected on a narcissistic basis. This third interpretation is corroborated, for the lower group, by the emphasis on conscience in items "lose self-respect" and "what is the worst thing that could happen to anyone?" Conscience and guilt feelings are after all essentially social referrerences, while fear of loss of approval or fear of failure are self references—contributed by the high group. The strongest support comes, however, from the item "What do you criticize most severely in a man?" The low group criticizes weakness—and how can there be a give and take relationship between a woman and a weak man?—while the high group emphasizes offensive masculinity, which can be interpreted as envy of masculinity and probably includes a fear of rivalry that is an expression of insecurity concerning success. Fear of getting hurt by men, related to fear of physical dangers, is also emphasized by the high group. Needless to say, rivalry and fear of injury are both narcissistic defenses.[16]

The second question, What are the dynamics determining the two kinds of choices? can now be restated: What in their past has determined that one group of girls are now ready, presumably, for object relationships, while the other group are not? The answer will emerge after some steps in psychoanalytical reasoning have been retraced. Freud states that the oral and anal phases allow only very rudimentary identifications to take place, because the strongest incentives to identification probably come with the wish to be loved by the parent of the opposite sex, which creates the desire to resemble the "rival" parent.[17] No clear conception of sex rôle can be expected if an individual's emotional development has been partly arrested before, in the "genital" phase, object relationships have been formed and identifications had a chance to develop.[18] After establishing the probability that the low group made choices in terms of object relationships—and in terms of heterosexual sex symbols—it can now be said that narcissistic choice and non-awareness or rejection of sex rôle together appear to be responsible for choice of female symbols by the high group.

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[16] Karl Abraham discusses causes and effects of women's relationship to masculinity (1).

[17] Freud, *On Narcissism, Group Psychology, Psychology of Women.*

[18] In his paper on Melancholia (*Collected Papers*, Vol. IV), Freud discusses another factor which contributes to identification: the necessity of giving up the parents as love objects leads the child to "take them in"—internalize them. He makes their standard his own: he "identifies" with them.

From the present data no evidence can be obtained to show directly that identification with the mother was accomplished by girls in the low group. However, indirect evidence is available in the fact of the father's importance in the lives of these girls. When they say that their father influenced them most, they say that they accepted his part as active and effective beyond the mother's. They also say, when they object to the mother's remoteness, that they are not so much afraid of the mother as to stay away from the father for fear of losing her love. Having rated the father's discipline as most effective, they say, too, that there is enough father identification in them to have produced well integrated moral standards, as shown by their answer to the superego items in terms of offense against conscience. They say that mother and father identifications do not conflict when they claim that both parents set the standards for the family. And finally, they say that they are so certain of their sex rôle that they can accept the notion of masculinity in both of its forms: in themselves as a potentiality when they frankly state that they would like to be a man in wartime, and in their sex partner when they do not want him weak.

Looking at the high group, one finds demonstrated the recurrent tragedy of arrested development: with narcissistic needs goes greater dependence upon outside objects than with object related needs; the less an individual can give, the less he is given; the more he needs, the more he is frustrated; the more he withdraws, the less can he afford to give up whatever object relationships he has. When girls say that their mothers influenced them most and that their discipline was most effective, they tell how they never could afford to displease the mother, who was also the person setting the standards for what was pleasing behavior. Causes for such dependence on the mother can only be guessed: overly severe training methods can perhaps be expected in a woman who marries a man whom she then proceeds to make insignificant; his very insignificance, or in other cases, his aggressiveness, may make the father unsuited as a love object.[10] The causes of such development, however, are not as well known as their effects. Obligation to please the mother broadens to an anxious need for social approval. Feelings of helplessness and impotence caused by the dependency situation develop into great fear of failure and into resentment of masculinity. The result is an inability to identify with any man to the point of understanding or accepting him, coupled with an inability to forgive his potence. The only defense is to repress the entire conflict, to reduce masculinity to insignificance and to remain a mother's daughter rather than to be mate to a man.

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[10] Freud thinks that such behavior in women is hardly ever a direct continuation of their infantile (mother related) sexuality—but that as a regression, following disappointment in the Oedipus situation, girls revert to their earlier form of sexuality ("Psychology of Women," *New Introductory Lectures*).

Assuming the theoretical reasoning on which the present experiment is based to be correct and inferences from the results to be consistent with this reasoning, then it may be stated in conclusion that preference of predominantly female symbols by girls appears to be an indication of a narcissistic personality; that such a preference suggests incomplete parent identifications and indefiniteness of sex rôle; and that such individuals appear to be lacking in integration and strength. On the other hand, preference of predominantly male symbols appears to be an indication of object directedness; such a preference suggests integrated parent identifications and clearly defined sex rôle; thus the picture of a strong and well integrated personality emerges.

Regarding the symbol test itself it may be said that in its present form it discriminates, in terms of groups, between kinds of sex adjustment. The present study represents a first approximation. It is hoped that future research will lead to refinement and eventually to standardization so that individual scores can be interpreted and utilized for clinical and research purposes.

VIII. SUMMARY

To investigate the relationship between attitudes toward sex and personality structure, preference for male or female sex symbols was correlated with responses on a personality questionnaire. Pairs of pictures each showing one male and one female symbol were presented to 119 female undergraduates, who indicated their "aesthetic" preference in each pair. Scores were assigned to the female symbols. The group was divided into a low and a high half. Relationships between responses to each of the questionnaire items and both the score groups were tested by the Chi Square method.

Sixteen questionnaire items proved significant on the 5 per cent level or better. Considering all of these differences together, it was concluded that girls preferring male symbols were more mature, i.e., accepted their rôle as women and accepted men as their counterpart, while girls preferring female symbols were less mature.

IX. APPENDICES

A. APPENDIX *A*: SAMPLE QUESTIONNAIRE (Table 10)

TABLE 10

(This is a study of values. We are interested in finding out what are the most popular churches, opinions, kinds of people, occupations, hobbies, attitudes. At present we want to know about values among college students and their families, just how much these things mean to them, and why. It will be a great help if you answer our questions both quickly, according to your first impression, and clearly, so that we can be sure to get your meaning. Do not put your name on your paper; we are interested only in the responses of the group, not in the identity of any particular individual.)

Date of birth: Year..........Month ....Day ....
Sex: ....
Birthplace: ....
(State or County if you prefer)

List age and number of your brothers and sisters: ....
What are some of your favorite foods and drinks? ....
What foods do you dislike? ....
Are there any foods to which you are allergic? ....
Check *one*:

Are you a (heavy ... / (moderate ...... / (light ...... eater?

Are the things you like to eat the same as those you "ought" to eat? ....
Or do you have conflicts? ....
Who wins, you or your conscience? ....
What occupation do you intend to follow? ....
Do you have any hobby or favorite extra-curricular activity? ....
What is it? ....
What is your favorite newspaper? ....
Magazine? ....
Radio program? ....
What political party do you prefer? ....
Why? ....
In what subject are you majoring? ....
Do you like it very much? ....
Fairly well? ....
Not so much? ....
What was your favorite fairy tale when you were little? ....
Did you like fairy tales? ....
Give the names of great people, living or dead, whom you admire most: Men..............................
Women ....
What would you like people to say of you after you are dead? ....
What religion do you prefer? ....

Are you a church member? ....

What church? ....

How often do you attend services?

Regularly? .... Often? ....

Seldom? .... Never? ....

How important do you think religion is? ....

What would make you lose your self-respect? ....

What is the worst thing that can happen to anyone? ....

What behavior do you criticize most severely in a woman? ....

In a man? ....

What would you do if one of your friends was violently disliked by your father? ....

By your mother? ....

If you were a parent, what things would you try most to instill in your child? ....

What would you try to discourage? ....

What methods would you use?

Firm orders? ....

Rewards and punishments? ....

Persuasion? ....

Others? ....

Which of your parents has been your favorite? ....

What parent has influenced you the most? ....

Whose discipline was more effective? Father? .... Mother? ....

Whose discipline did you fear the most? Father? .... Mother? ....

Which parent do you most resemble?

In appearance: Father? .... Mother? ....

In temperament: Father? .... Mother? ....

Which parent set the standards for your family and was considered the first authority? Father? .... Mother? ....

Even the best of parents can be irritating, once in a while.

What irritates you in your mother? ....

What irritates you in your father? ....

What might drive a person "nuts"? ....

What things or situations are you most afraid of? ....

We all dislike certain types of people, or certain traits in them.

What in others irritates you most? ....

Do you ever wish to be different than you are? ....

Would you like to be a man: in wartime ....; in peacetime.......

a woman: in wartime ....; in peacetime.......

What is the most fun to do on a vacation? ....

Describe, if possible in detail, the situation that would hold the most happiness for you: ....

What is an experience you are most anxious to have? ....

If you were much in love, would you hesitate to marry a man:
10-15 years older than yourself? . . . . . .
10-15 years younger? . . . . . .
At what age do you expect to marry? . . . .
How many children would you like to have? . . . .

B. Appendix *B*

1. *Sex Differences*

TABLE 11
Distribution of Men's and Women's Choices per Symbol Pairs

	Male					Female				
	Men		Women			Men		Women		
Pair:	*N*	%	*N*	%	Diff.	*N*	%	*N*	%	Diff.
1	33	50	65	55	+ 5	33	50	54	45	— 5
2	26	39	37	31	— 8	40	61	82	68	+ 8
3	39	59	95	80	+21	27	41	24	20	—21
4	63	95	111	93	— 2	3	5	8	7	+ 2
5	45	68	79	66	— 2	21	32	46	34	+ 2
6	53	80	97	82	+ 2	13	20	22	18	— 2
7	46	70	81	68	— 2	20	30	38	32	+ 2
8	51	77	80	67	—10	15	23	39	33	+10
9	55	83	95	80	— 3	10	17	24	20	+ 3

Table 11 includes all of the original pairs of symbols. It can be seen that Pairs 2 and 8 show a tendency to reverse results. In Pair 4 the male symbol, probably for aesthetic reasons, is universally preferred, so that sex differences do not seem to enter the choices made. Mainly because of these results, corroborated by the data from the paired comparisons, these three pairs were eliminated from the scoring. The pictures have since been worked over and will be retested.

2. *Paired Comparisons*

Table 12 gives the results of the paired comparison presentation, including the three rejected pairs of pictures.

Pair 2, eliminated because of the reversal of preference in the initial presentation, proved to have the highest separation value, while Pair 8, which was eliminated for similar reasons, proved to have the lowest of all separation values found. It may be that the contrast between the feminine character of the female symbol and the masculine character of the male symbol must not be too slight or too great if one wants to avoid distorted reactions.

Pair 4, with a high separation value and a low scale value, neither of which is too extreme, would probably discriminate better were it not for the difference in aesthetic value.

TABLE 12

DERIVATION OF SCORES FROM PAIRED COMPARISON DATA

Symbol	No. of judgments "masculine"	Proportion of judgments "masculine"	Deviate in *S.D.* under normal curve	Separation value	Scale value	Position value	—66	$\frac{x}{10}$	Final score (*rounded*)
				Male					
1 *A*	487	60	.25	(.58) 6	(—.15) —1	— 6	— 72	— 7.2	— 7
2 *B*	538	66	.41	(1.) 10	(.10) —2	—20	— 86	— 8.6	— 9
3 *B*	701	86	1.08	(.70) 7	(.75) 8	+56	— 10	— 1.	— 1
4 *A*	455	55	.12	(.70) 7	(—.23) —4	—28	— 94	— 9.4	— 9
5 *A*	355	43	—.18	(.66) 7	(—.51) —5	—35	—101	—10.1	—10
6 *B*	633	78	.77	(.47) 5	(.55) 6	+30	— 36	— 3.6	— 4
7 *A*	476	58	.20	(.67) 7	(—.13) —2	—14	— 80	— 8.	— 8
8 *B*	448	54	.10	(.25) 2.5	(—.03) —1	— 2.5	— 68.5	— 6.8	— 7
9 *A*	384	47	—.07	(.67) 7	(— .4) —5	—35	—101	—10.1	—10
				Female					
							+66		
1 *B*	303	37	—.33	(.58)—6	(—.05) —1	+ 6	72	7.2	7
2 *A*	223	27	—.61	(1.)—10	(.10) —2	+20	86	8.6	9
3 *A*	533	65	.38	(.70)—7	(.75) 8	—56	10	1.	1
4 *B*	235	28	—.58	(.70)—7	(.23) —4	+28	94	9.4	9
5 *B*	160	20	—.84	(.66)—7	(—.51) —5	+35	101	10.1	10
6 *A*	505	62	.30	(.47)—5	(.55) 6	—30	36	3.6	4
7 *B*	260	32	—.47	(.67)—7	(—.13) —2	+14	80	8.	8
8 *A*	360	44	—.15	(.25)—2.5	(—.03) —1	+ 2.5	68.5	6.8	7
9 *B*	190	23	—.74	(.67)—7	(— .4) —5	+35	101	10.1	10

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OUTSTANDING TRAITS: IN A SELECTED COLLEGE GROUP, WITH SOME REFERENCE TO CAREER INTERESTS AND WAR RECORDS 127

BY F. L. WELLS AND W. L. WOODS

(With the collaboration of the Grant Study Staff)

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OUTSTANDING TRAITS: IN A SELECTED COLLEGE GROUP, WITH SOME REFERENCE TO CAREER INTERESTS AND WAR RECORDS*

The Grant Study, Department of Hygiene, Harvard University

F. L. WELLS, PH.D., AND W. L. WOODS, M.D.
(With the collaboration of the Grant Study Staff)

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PREFACE AND SUMMARY

The system of traits upon which this account is based, their definitions (though not always their nomenclature) and their assignments to the men studied, are the work of W. L. Woods and through him, of the psychiatric staff generally. The foundation of this psychiatric work is already presented in publications by Heath, and by Hooton, as named below. In this psychiatric phase of the present publication, Wells had no part. In the remainder, that is, some elaboration of the concepts, the account of trait interrelations, and the association of the traits with other variables of the Study, responsibility for text rests almost exclusively with Wells. He is thus the responsible author and editor of the text; *he is not the author of any of the data* except those pertaining to mental measurement, principally in Chapter 4. Woods is the responsible author of the trait assignments on which the presentation is based; the various members of the Study staff being the authors of accessory data from their special fields.

It will be clear that there is heavy indebtedness to other divisions of the Study and to the other members of the Staff, past and present, who assembled the data pertinent to their disciplines. Acknowledgments are due most directly to Clark W. Heath, M.D., for general medicine and physiology; to Carl C. Seltzer, Ph.D., for physical anthropology as well as statistical aid; and to Miss Lewise W. Gregory for social history and follow-up. For any psychometric work, Wells is directly responsible. Such statistical handling as the data justify has been under the general counsel of Dr. C. R. Doering of the Harvard School of Public Health. Very helpful criticisms were also received from Mr. Lawrence K. Frank. For statistical computations and editorial assistance, much is owing to Mrs. E. B. McTernan of the office staff.

For broader accounts of the research and its organization, reference should be had to:

HEATH, C. W., *et al.* What People Are. Cambridge: Harvard Univ. Press, 1945. Pp. 141.

HOOTON, E. A. Young Man, You Are Normal. New York: Putnam, 1945. Pp. 210.

WELLS, F. L. A Research Focused Upon the Normal Personality: A Note. *Charac. & Pers.*, 1944, 12, 299-301.

The two comprehensive reviews (Heath, Hooton) include an introduction to the present more restricted topic. It is necessary to assume their content in some part. There is here embodied such discussion of the trait system previously described, as is indicated by further scrutiny.

The introduction points out that the traits considered are those especially distinctive of this selected college group; they would be much less applicable to the description of persons in general. It also lists the names given the 25 traits thus outstanding, and the proportions in which they were observed. Five special areas are represented, though in varying degree: physiological, affective, volitional, ideational, and social. The "Trait-Series" chapter takes up the definitions and various properties of each of these 25 traits, in order. Among the more distinctive features here are the comparative relations to the personality "soundness" classes (*A*, *B*, *C*); the tripartite division of the Affects (Vital, Bland, Sensitive); the separation of the Shy from the Asocial group; and the discussion of nature-nurture in the determination of social traits generally. The following chapter is mainly concerned with the selectivity with which the traits appear in those planning careers for example in the arts, in business, or in medicine; with mention of the war's effect on the medical career plan. Chapter 4 considers the relation between these outstanding traits and various more objective criteria of mental functioning, such as "intelligence" tests and the like. The general lack of relationship between these two areas is sustained, though relationships are indicated at certain points, as between "Sensitive Affect" and verbal test functions, or between these verbal functions and features of body-build. The succeeding chapter discusses the relations of each of the "outstanding traits" with the other members of the series. The behavior of the affective area with reference to the ideational and social, particularly the behavior of "Physical Science Motivations" with reference to the social area, are of special interest at this point. In Chapter 6 effort is made to integrate the present trait-series with important systems of personality evaluation that have preceded it, and to outline the manner in which further work along the present lines should proceed.

In the presence of the effective follow-up, the war situation offered peculiar conditions for the validation of these previous estimates. A general account is given of adjustment in the armed services as related to, or forecast by, the personality assessments made during the period of direct observation. Some particular cases are reviewed, and special attention is given to the men who have received conspicuous awards. The overall indication of this section is a higher level of armed service performance than the Study estimates would have predicted; which raises searching questions as to comparative values in academic and armed service disciplines as instruments of "general education."

13 Holyoke Street
Cambridge 38, Massachusetts

I. INTRODUCTORY

As elsewhere described (Heath, '45; Hooton, 45, pp. 44-50), a group of slightly over 250, 257 for the most part,[1] healthy, well-adjusted Harvard undergraduates were especially observed during the years 1938-1942. The methods were adapted from psychiatry, physiology, general medicine, physical anthropology, clinical psychometrics, and social case work. This presentation takes up a number of characteristics of the young men so studied (hereinafter known as "participants," Hooton's "Grantees"), in certain relations to each other, including their contemporary plans and actual later adjustments, during the war period.

Of the various disciplines concerned, psychiatry occupied a focal position, as the one most concerned with the human organism functioning as a whole, that is with the personality. It is not surprising that out of this distinctively organized study, there should grow a somewhat distinctive system of personality description. On the essentially inductive basis of the experience with the participants' life histories, there evolved, as of the time of evaluation, a series of some 25 trait designations specially suited to these purposes. These are set forth in the above writings, and since they are basic to this presentation as a whole, they are here enumerated at the outset. For each of these traits there is given immediately (*a*) a designating name (other nomenclatures in parentheses), (*b*) an abbreviation based on the name, by which it is generally known in this presentation,[2] (*c*) the number of participants in *whom this trait or trait-complex is recorded as a salient characteristic,* (*d*) the percentage which this is of the total group. Each trait as named is then taken up in order, with regard to definition (in the manner cited by Heath) and special properties. As will be evident, a variable number of these traits may be assigned as "outstanding" in the same individual. A rich personality might be assigned as many as 10 of these traits; a less colorful one, hardly one or two. Nor are the categories without overlap in definition, as will be seen for example with those designated "Shy," and "Sensitive Affect"; or "Ideational" and "Verbal Facility." The series is accordingly presented in Table 1.

The basic data, as made available through the psychiatric division of the research, accordingly comprise (*a*) the above table; (*b*) a record of which of these traits are assigned (as "outstanding") to each participant; (*c*) a

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[1] Numbers concerned will vary, as not all observations were made with every participant. The total number registered for the study is 268.

[2] As it is often desired to be especially clear that the present ratings are meant, rather than what the words might mean in more general usage.

TABLE 1

THE SERIES OF TRAITS

For example, the trait *UAF* was assigned to 36 cases; this is 14.0 per cent of the total 257.

(*a*) Trait designation	(*b*) Abbreviation	(*c*) Number of cases out of 257, in which assigned	(*d*) Percentage
1. Unstable Autonomic Functions	*UAF*	36	14.0
2. Basic Personality Highly Integrated	*BPH*	153	59.5
3. Basic Personality Less Integrated	*BPL*	38	14.8
4. Dominance of Mood (Mood Fluctuations)	*DM*	41	16.0
5. Vital Affect	*VTA*	52	20.2
6. Bland Affect	*BDA*	46	17.9
7. Sensitive Affect	*SVA*	44	17.1
8. Just-So	*JS*	35	13.6
9. Self-driving	*SDR*	36	14.0
10. Inhibited	*IHB*	49	19.1
11. Practical Organizing	*POR*	95	37.0
12. Self-conscious Introspective	*SI*	65	25.3
13. Ideational	*IDL*	54	21.0
14. Creative-Intuitive	*CI*	16	6.2
15. Cultural	*CL*	54	21.0
16. Physical Science Motivations	*PSM*	32	12.4
17. Inarticulate	*IAT*	36	14.0
18. Verbal Facility (Verbalistic)	*VF*	46	17.9
19. Shy	*SHY*	47	18.3
20. Asocial	*ASC*	24	9.3
21. Sociable (Friendly)	*SCB*	55	21.4
22. Pragmatic	*PGC*	99	38.5
23. Social Science Motivations (Political)	*SSM*	44	17.1
24. Human Values (Humanistic)	*HV*	40	15.6
25. Lack of Purpose and Values	*LPV*	56	21.8

record derived from the previous, of the number of times each trait is paired in the same individual, with each other trait.

Obviously the trait series does not give an inclusive, or even proportioned, conspectus of an individual personality. The categories are simply a congeries of points around which the sum of this special experience tended in the minds of the psychiatric examiners, to focalize.[3] Their relation to more broadly conceived and elaborate systems of personality description is dealt with in a subsequent chapter (pp. 203-217).

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[3] Trait-names present a semantic problem of some difficulty. The behavior they are intended to denote is never adequately expressed by any single word or even phrase; yet it is practically necessary to denote it by some brief symbol, and it is desirable that this symbol should embody some cue to what is denoted. Present trait-names of record, vary from the monosyllable "shy" to the extended phrase "good formulation and richness of language expression" (here replaced by "verbal facility"). In the present nomenclature it is attempted to preserve something of the cue as above, yet keep in sight the arbitrary features of any designation reasonably

The technically minded reader will wish to know more precisely what is meant by "outstanding" as applied to these traits. As the assignments were made on a wholly psychiatric basis, the question depends on this source for an answer. A recognized psychological procedure in circumstances such as these, is to assign ratings on an estimated percentile basis; "outstanding" might be understood to mean within the upper 20 per cent or 10 per cent of people in general, or of college students as a group. Such could hardly be the case here, for the trait-categories range in frequency from Basic Personality Highly Integrated, which includes some three-fifths of the group, to Creative Intuitive which includes but a sixteenth. A rough approximation is attainable through the psychiatric estimate that the rating of Basic Personality Highly Integrated represented about the upper 10 per cent of persons at large in respect to basic personality, and other traits in proportion. E.g., Vital Affect, which is assigned in about a fifth as many as Basic Personality Highly Integrated, would represent an upper two per cent; Creative Intuitive, the rarest of the categories, would represent an upper one per cent.[4]

All following statements of trait-relationships are subject to this consideration. When one adds to this the comparatively subjective criteria which necessarily govern the assignment of the traits, it will be clear that repeat-

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convenient. The usage of "trait" is always to be understood as including "trait-complex." The term is used pretty much as defined in Allport ('37, pp. 139-140; also 235 ff., 286 ff.). The trait-definitions cited are those of record attaching to this classification of the participants.

Schemata like these naturally undergo progressive refinement, but such a refinement less properly represents the basis on which the present classifications have been made. As Seltzer has phrased it, "the personality traits here described are heavily weighted towards the aspect of life attitudes, intellectual functions, and motivations. This has come about as a natural result of dealing with college students, selected normal individuals, and the particular orientation of the psychiatrists to the problems of career choice or life work of the subjects." (From C. C. Seltzer, *Ms.* "Body Disproportions and Dominant Personality Traits").

In Sheldonian terms, the present series is rather "cerebrotic," say 3-2-6 in that convenient notation. Murray's ('38) system would be fairly balanced, say 4-3-4; while Kempf's ('41) would be more like 4-6-1.

[4] The data thus designate an upper crust as regards these traits, and a crust that is variable in thickness; thickest for Basic Personality Highly Integrated, thinnest for Creative Intuitive. Information as to status in these traits for those who fall outside this upper crust is generally unavailable. A partial exception exists in the case of Basic Personality Less Integrated, which represents for these individuals the opposite pole from Basic Personality Highly Integrated, but the two by no means cover the range of the participants in respect to the qualities they denote. Cf. also polar relationships in Sensitive Affect-Bland Affect; Inarticulate-Verbal Facility.

ability of the work, in the quantitative sense of this term, is hardly within question. Qualitative repeatability there is, in the sense of the adequacy of various traits in the series validly and usefully to contribute to the art of personality description. Concerning relationships and "clusters," effort is made to understand what does appear, but it is to be looked on as an attest of direction rather than amount of relationship. Thus in the material, the traits Unstable Autonomic Function and Shy are positively associated, with an excess of 13 : 6.6 over chance expectation, and a statistically significant critical ratio. Unstable Autonomic Function tends to negative association with the Bland Affect category, though very slightly by comparison (4 : 6.4). This illustrates the framework in which this portion of the data is mostly presented.[5]

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[5] In such pairs of figures as cited above, e.g., 4 : 6.4, the first figure represents the number of pairs actually observed, is thus always an integer. The second figure denotes the chance expectation, in this presentation often termed "par"; and is regularly cited to one decimal place.

II. THE TRAIT SERIES

It has recently been remarked that the essentials of personality are to be succinctly stated under the headings: (*a*) How did he get that way? (*b*) Can he take it? (*c*) "He would." The first denotes, for present purposes, the nativist-environmentalist issue.[5a] The second largely represents the "basic personality" concepts of the present classification, and in general would denote the contribution of a given trait to the stability of mental organization (cf. the table given by Heath, 45, p. 31). The third connotes the predictions implicit in any assignment of normal traits, just as the diagnosis of a disease carries with it something of a prognosis. And like this diagnosis, it implies also a symptomatology; the assignment of normal traits like the present, is properly based on certain behavior characteristics, with which this chapter is chiefly occupied.

Relevant comment is here generally practicable on the first two of these topics. The third, as it deals with prediction, is considered in a later portion of this presentation, that with special reference to war records. As it deals with more detailed behavior criteria of classification it is a specifically psychiatric matter, governing the assignment of the present traits. Other topics of relevance are the degree to which the present frequencies of the traits are representative of different populations, and meaning of the traits as they affect other persons.

The next step is to describe as well as is practicable, the concepts which these trait-designations are intended to denote. To this end there is cited for each trait, in order, the essence of the definition formulated for it by the author of the schema, at the beginning of each section in parentheses. The content of this is taken from the monograph by Heath already mentioned, somewhat paraphrased for the present setting. This is followed by some discussion of the concept, including some of its specific properties for the present material.

UNSTABLE AUTONOMIC FUNCTIONS, *UAF*

(Primarily denotes the prominence of such symptoms as tremulousness, blushing, increased perspiration, palpitation, psychogenic disturbances of urinary and gastro-intestinal functions. But symptoms of a more strictly psychic coloring, periodic anxiety attacks, or undue chronic anxiety, have also been a basis for this classification.)

[5a] Attention has been directed elsewhere to an important non-rational component in nature-nurture attitudes, prejudicial to a balanced assessment of these influences. No intransigent position is compatible with the present observations.

This trait occupies a special position with respect to the others in that its criteria are much the least under cerebral dominance and least within voluntary control. Also its physiology is capable of much the most direct observation, even measurement; and some data of this sort are available in the general research. These are subject to the reservation that the laboratory setting may not properly represent what the responsiveness is under life-conditions. There has been some evidence that it does not (cf. Wechsler and Jones '28; Jones '35), and relevant scrutiny of the present data may be expected to contribute light on this question. The present judgments are essentially on a life-history basis rather than one of experimental physiology; and allowance must be made for maturational factors.

UAF is assigned in about one in seven of the participants. Since it is almost by definition a trait handicapping to normal adjustments, it is to be expected that, similarly judged, it would be assigned to a fully representative group of students in somewhat greater measure than this. And unless one is prepared to assume that the student body as a whole is autonomically less stable than the general population, it follows that this trait is also generally more marked than is observed with this group, which is otherwise selected for stability of adjustments.

The degree of any given trait's rôle in this respect, is here observed through its relation to the comparative "soundness" classes of *A*, *B*, and *C* (for discussion of these terms, cf. Hooton '45, p. 40; pp. 116 ff.). In the present instance, the *A*, soundest, class has a 3 : 13.0 deficiency and the *C* class a 13 : 6.4 excess of the trait; each "significant."[6] The middle, *B* class, has an insignificant deficiency. The only circumstances in which such a trait can be an individual or social asset is on some compensatory basis, as set forth by Alfred Adler. This presumably operates in those of the present individuals to whom it is assigned, who at the same time rate as notably well-organized.[7]

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[6] The term "significant" and derivatives are here used in a statistical sense, denoting cases where a critical ratio, derived as noted on p. 185, is in excess of 2. Practically of course, significance does not spring full-bodied from the head of Jove, and may emerge at considerably lower levels of critical ratio. Most bookmakers would be glad to get even money against a 4 to 1 favorite in a two-entry horse race, though these odds do not rate as "statistically significant"; they have to be more like 20 : 1.

The above odds of 4 : 1 would thus be *pragmatically* significant, while not *statistically* so. On the other hand, the statistically significant difference in the heights of men and women would not be pragmatically significant, in the function of judging a person's sex. The meaning which "significance" has acquired in statistical usage has tended to blur the distinction between its statistical and pragmatic aspects, and it will bear considerable reassertion.

Irrespective of the size of an individual *CR*, no relationship is cited as significant for an *A*, *B*, or *C* classification unless the sum of the squares of all their contingent *CR*'s equals 6 or more. The term *trend* or *tendency* is used to designate occasional associations not significant by the above criterion, but otherwise meaningful for present purposes.

One may fairly postulate a native factor in the stability of autonomic function; but the degree to which one is exposed to situations that bring any instability into play, will influence profoundly the effects of such instability.[8] In the same unstable constitution, a placid environment might induce no pathology, a stressful one, a stomach ulcer. The situation appears complicated by the introduction into the *UAF* rating, of features not themselves autonomic; i.e., anxiety. It is brought out that anxiety might occur without autonomic disturbances, and the converse is perhaps equally true. It is implied in the definition given that it is not absolutely necessary to have shown autonomic anomalies *sensu stricto*, for the assignment of the *UAF* classification; but it has been psychiatrically attested that the trait *UAF* may here be taken in its literal, somatic sense.

BASIC PERSONALITY HIGHLY INTEGRATED: *BPH*

(A complex of traits denoted by such adjectives as steady, stable, dependable, thorough, sincere, trustworthy. This steadiness and integrity of personality is not a function of autonomic or emotional stability. These underlying integrations are the most important determinants of how the young man deals with the common problems that confront him, such as career choice, the competitive environment, moral and religious attitudes, sex.)

The term thus appears very close to the *A* category of soundness, and actually four out of five of the *A* group are also found here. The excess in numbers over expectation is only some 20 per cent, but it is well within the limits of significance. In the *B* class, there is a negligible deficiency, in the *C* class a 10 : 27.4 deficiency, though it will bear some clinical explanation how two such opposed estimates find themselves attaching to the same individual, in as many as 10 of the present cases.

By definition these Basic Personality traits denote features looked on as native, permanent, deeply ingrained. They concern what the person "is," not what he would like to be or wishes to appear. They represent a summation of, or may be broken down into, a number of components, as among the remaining traits of this series and others. Whatever may be the formulation of normal, the basic personality postulates a functional level where integrity or defect is decisive. Decisive that is, in respect to how far one can "take" the handicaps and shocks imposed by other personality features, or by accidents of the environment. Every inductee in the armed forces has been accepted through an implicit medical evaluation of this trait. Such degrees of basic stability have long been a necessary concept in psychiatry, owing to the irreconcilability of "psychogenic" disorders so called, with external events as remote or precipitating causes.[9] Here one deals with the opposite end of the scale; many serious problems, handicaps, deviations may be present elsewhere in the personality structure, but with *BPH* these are absorbed, controlled, and integrated; nervous symptoms and maladjustments do not occur, though the difficulties are not different from those with which others fail to cope. The more one can in this sense "take," the stronger is the basic personality as here conceived.

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[7] Cf. the comment on Jefferson Davis (Bradford '12, pp. 50-51): ". . . a nervous sensitive, which is a terrible handicap to a leader of men. He suffered always with dyspepsia and neuralgia and came home from his office fasting . . . consuming in superb self-control too much of what ought to be active, practical, beneficent energy." Cf. the relation observed here to the trait Self-Driving.

[8] It may be very difficult to distinguish from native influences, those of very early life; e.g., unsettling experiences as in weaning, hampering the achievement of due autonomic balance (cf. below, under Asocial; and, generally, Hooton '45, pp. 130 ff.; also 204 ff.).

Possibly this is the essence that should be stressed in the formulated definition rather than various cited qualities, largely moral, which are secondary to it. They are common accompaniments of *BPH* but not ineluctable ones, and they or counterfeits can be found where little basic personality strength is present.

In all, some three out of five of the participants are so classified. From the manner in which they were selected, it is to be supposed that this quality is here represented to a greater degree, perhaps much greater, than in an average student body. A more searching question concerns the degree to which these qualities occur in college populations as compared with populations otherwise selected. Higher education does select primarily for intellect, though in our culture perhaps less rigidly than is in its own and society's interest. Actual selection for higher education on the non-intellectual grounds represented in *BPH* is problematical, may not even be positive.

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[9] "It is probable that parallels to all the traumata, problems, and early experiences listed by psychiatrists as etiological factors in the range of nervous and mental disease, occur in the histories obtained through participants in the present study. Stories of unhappy homes, separation or divorce of parents, premature heterosexual experience, for example, are common enough, where no disequilibrium whatsoever is observed in the participant" (W. L. W., cf. also Hooton, p. 75).

BASIC PERSONALITY LESS INTEGRATED; *BPL*

(The presence of Basic Personality Highly Integrated qualities in less marked degree, tending toward the erratic, unpredictable, undependable. Activities are less well directed, little organized, and show less fixity of purpose. By definition, however, this lack of organization is not incompatible with effectiveness in dealing with most situations.)[10]

The semantic problems of the Study have nowhere been more acute than with this category; the search for a non-invidious term by which to designate it. Aside from the propriety of value-judgment in any case, no really contrasting terms are desirable as the differences are not great; the term *BPL* represents simply the lower limits of tolerance in the Study, for the basic personality rating. Moreover, the characteristics of the *BPL* group are such as lend themselves under many circumstances to greater personal success, not to say social contributions, than is the case with Basic Personality Highly Integrated.[11]

BPL is assigned to about one in seven of these participants. It should be nearer the average of college and of general population than *BPH*. The soundness classification *A* contains no instance of it. Class *B* shows a slight trend to deficiency, 13 : 16.6, and Class *C* a 24 : 6.9 excess.

Covering 212 cases observed during the first three years, a breakdown is available of the present trait-series against certain social data. Two of these throw a sidelight on the relationship of the *BPH* and *BPL* groups. Consider the datum of having at the time of observation done no remunerative work in or out of college. Here there is a nearly 20 : 11.6 excess of the *BPL*'s, well within the significant limits. Consider also the attribute of disapproval of the house system; that is the administration of the student residence halls. Here *BPL* shows a 7 : 2.4 excess, somewhat further within significant limits. By comparison, *BPH* shows a small deficiency in the non-worker group, and a nearly 1 : 2 deficiency in the disapproving group, but neither meets the criterion of significance.

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[10] Not all the participants were classified as to basic personality; only those who gave the more distinct evidence of meeting criteria of *BPH* or *BPL*. A mid-group, somewhat more numerous than *BPL*, did not enter (in this respect, that is) into the analysis on which this presentation is based. A special examination of their trait-groupings, made by Dr. Seltzer, disclosed a notable lack of distinction in regard to the other traits. Individuals unclassified as Basic Personality Highly Integrated or *BPL*, are unlikely to have outstanding positions, in either direction, as regards the trait-series in general. The question has been raised as to a likelihood of more "outstanding" trait assignments in the less integrated. In these observations the *B* soundness class has the most trait assignments, the *C* class the fewest, and the differences are negligible.

[11] . . . *BPH* furnishes "those steady, reliable men who are the raw material of great reputations, one of those uncounted lives that are buried without drums and trumpets under the foundations of monumental successes" (Joseph Conrad: *Lord Jim*). Cf. also Heath, p. 21.

These basic personality differentials invite further consideration from the standpoint of social adjustment, and it will bear more emphasis that the values are by no means all on one side. Cogent evidence to this effect is obtained if one goes well outside the limits that would be regarded as normal in this setting, and observes the mark which such individuals have left upon culture-history. The contribution of the personally less organized individuals is so heavy as to have given rise to a considerable literature on its association with neurosis and even psychosis. There is a large spurious element in this association, and its fallacies have been pointed out by East ('38). On the other hand one has but to consider what would be lost to science and the arts if they depended even mainly on individuals with the integrations required of Grant Study participants. The suggestion is offered that in proportion to its numbers the present *BPL* group will more than keep up its end in the creative aspects of culture, and in those aspects of inter-personal relationships where there is a heavy premium upon opportunism as opposed to fixity of purpose.

Basic Personality Highly Integrated is pretty much a requisite of the getter-doner. The worker-outer can do with less, and to his thinker-upper colleague other qualities are more important, for which if necessary, he can well afford a price in the traits of "basic personality."

It is likely that Napoleon could not have qualified as a participant in the Grant Study.[12] Under some magnification, the distinctions of *BPH* and *BPL* somewhat resemble the stereotypes of soldier and diplomat. The professional duties of war include the strongest tests of basic personality; a far greater part of diplomacy lies in the ideational sphere and very seldom makes comparable demands on the organism as a whole. There are recorded several cases in history where the pen and even the tongue, has outmatched the sword. The time of Belisarius was not the first, and it is still no more than a hope that the time of Ferdinand Foch is the last.

DOMINANCE OF MOOD; *DM*

(There are two subclasses; *a* mood swings, *b* continuous and prominent degree of some phases of mood. Mildly depressed phases are described, with lack of energy, unproductiveness in work, varying qualities of sadness and despondency, and their natural social concomitants. Occasionally periods of elevation are described, in which there is greater productivity and sociability. Increased facility of talk to the point of mild flightiness may be observed; manifesting itself also in a difficulty of organizing work. Changes in the amount of sleep needed are commonly described. But these changes are only within the range of purposeful behavior, and are so integrated with the rest of the personality as to pass unnoticed if this is the only mood phase of the individual with which one happens to be familiar.)

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[12] Any more than would have Chopin, Thomas Gray, Walt Whitman, Schopenhauer, Charles Lamb, Rousseau, Swinburne.

This description is substantially that of a subclinical affective psychosis, either of a circular, or stable "constitutional" type. It is at least internally consistent to suppose that the underlying nature is similar, and that it is the strength of basic personality traits as just dealt with, that keeps the deviation from assuming psychotic proportions. The general experience of the Study has tended more and more away from the principle that the psychoses, or even psychoneuroses, are essentially continuous with a normal "psychopathology of everyday life." The present standpoint of the Study group is that the traits dealt with here and in the next three sections differ in kind as well as degree from the pathological phenomena which they superficially reflect.

In psychopathology, depressed phases considerably outnumber elated ones; here the disparity seems even greater; and though elated phases undoubtedly contribute (as they do in mild hypomanic excitements) to both general efficiency and well-being, there is no question that the trait belongs on the debit side of the ledger. The present selection might yield a group less involved with these deviations than the average student or young man generally, but the difference should be inconsiderable. Like the typical manic-depressive condition, these states are not reactive to any known features of the environment, and have a native determination similar to that of the basic personality traits.

DM is assigned to about one participant in six; the distinction of depression and elation, stable or episodic character, are not preserved in the actual trait assignments. In view of the clear pathological analogues, the relation of *DM* to the soundness classifications is striking. In the *A* class, there is a 10 : 13.7 deficiency only, far below the limits of significance. The *B* class shows practically chance expectation, the *C* class about a 10 : 6.7 excess, still too close to chance for significance. "Halo" effect from the psychiatric symptoms can easily account for such differences, and it is likely that these mood deviations scarcely enter as such into the soundness classifications at all.

VITAL AFFECT; *VTA*

(A force and energy which is spontaneous and is independent of voluntary effort. There is a richer verbal expression, greater facial animation, and more arresting voice than is denoted by the Bland Affect characterization.)

In this and the other two "affect" categories (Bland Affect, Sensitive Affect) the term affect is used for precision, to specify "the dynamic rôle of feelings and emotions in determining thought and conduct"; but it is true that in ordinary speech the meanings are largely conveyed without it, by the adjectives alone. The meaning of *VTA* is close to the colloquial "live wire." *VTA*, whose above characterization is far from embodying the full concept, stands in close relation with the elated phases of the mood-dominance category; to make a distinction between it and mild constitutional excitement is not always easy or perhaps profitable. Descriptively, it might be said to stand in the same relation to the hypomanic states, that the latter do to the euphoria of general paresis. It is by definition an integral factor in the personality, not subject to the unpredictable fluctuations that are implicit in Dominance of Mood. As such it is much more closely related to the soundness classifications. The *A* class has a 43 : 20.7 excess over expectation, with a critical ratio to satisfy the most critical. The *B* class show a 12 : 25.0 deficiency, and the *C* class a 1 : 10.2 deficiency. It is one of the two traits in this series that have *CR*'s over 2 for each of the *ABC* classes.

Of all the present traits, it is the most directly concerned with social leadership;[13] as its correlation with technical competence is anything but straight line, the leadership may be good or bad, but *VTA* contributes highly to its effectiveness, in either direction.

VTA is assigned to about one in five of these participants. It probably plays some part in the psychological criteria upon which they are selected, so that college undergraduates in general, and young men at large, may be expected to display it in lesser proportions. Clearly it has been conceived as an inherent, native trait; but there is a possibility of its including cases whose affective vitality is reactive, and secondary to certain stable factors in their environment. In the survey of social data already mentioned, there is in the highest income level ($25,000 up) a 14 : 7.5 excess of the *VTA* group, which is not approached at the other levels (cf. Hooton '45, p. 136). Two interpretations are at once possible. *VTA* is a trait very favorable to material success in this culture, and family stocks where it is inherent may well gravitate towards the highest income brackets. On the other hand, the social prestige derived from this income level can also, in a plastic mental organization, favor the development of traits at least simulating *VTA*. In the lowest income group ($0-4,999) there is a 6:12.4 *VTA* deficiency trend. Now while theoretically possible, there is really not much reason to believe that *VTA* has any meaningful connection with the income differences represented in the present college population. But in a high income group only the clearly unsuited are likely to avoid college; in the low, only the comparatively suited are likely to go. The *VTA* high school graduates from modest income homes have commonly put upon them more compelling pressures than those for a liberal education. The manner in which the college population is selected, selects rather against *VTA* at low income levels, but not at high ones.

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[13] This fact apparently led to some early overestimations of its rôle in modern war leadership, where in the present terms, the integration of "basic personality" seems to have the dominant rôle.

This is no advantageous situation. It is particularly desirable that those who wield the social influence potential in the *VTA* complex, have as rich an educational experience as they can assimilate. It has been elsewhere demonstrated how in our culture the intellectually able but economically underprivileged are denied higher education to the favor of those in whom the converse is true. But the present finding points up an equally important aspect of educational selection; not simply of the intellectually fit, but of those who will use their intellectual fitness in a manner socially beneficial.

VTA is not itself correlated with either judgment or morals. This is an awkward fact, especially for a culture like ours, where place has depended on individual achievement, rather than on caste status. It goes far to explain the slow, at times negative progress of social institutions, heavily influenced as these are in any case, by factors in leadership which are no bar to well-intentioned blundering or studied exploitation. It is a proper function of higher education to train leaders of men as well as leaders of thought. To do this it must give more weight in its requirements to non-intellectual factors that make for effective civil leadership. Of these, a salient portion is included in the trait-complex of *VTA*.

Bland Affect; *BDA*

(Designates relative colorlessness of emotional life; little vulnerability to disturbances of a "complex" nature; ease of adaptation to conventional routine; and consequent stability of adjustment.)

As ordinarily used, the term "bland" carries a meaning allied to suavity; here the meaning is more in the direction of impervious. "Frequently it seems as though nothing had ever happened to them. The relative meagerness of their histories is not the result of inhibition or reserve, but the impossibility of describing sensitivities they have never known. Essentially they are settled, contented, uncomplicated, apt to be factual, direct, and prosaic."

This trait is assigned to about one in six of the participants. From the above account, one might expect it to predominate in the *A* class of soundness but this is not the case; in fact, it distributes among the *ABC* classes with singular closeness to the chance expectation. It would seem that the very colorlessness of the concept kept it from influencing the *ABC* classifications. Incidentally it brings out the potential soundness of the *C* class integration as compared to the general average, since the above definition is a pretty clean bill of mental health. There is nothing in the present material pointing to an important rôle of environmental influences in the genesis of this trait.

Indeed there are few of the other variables here examined, where one would look for significant positive relations with *BDA* category. Negative ones there are, because of the contrasting positiveness of other traits; these are considered in a later section. One instance, however, occurs in the survey of social data, with reference to approval of the House System. While a considerable majority of the participants do so approve, *BDA* is the only trait grouping where the approvals significantly exceed those by chance expectation (no member of the *BDA* group disapproved). To understand this finding as denoting a more positive approval by the group, would almost certainly be fallacious. Approval is a conventional attitude, and this trait is as noted, favorable to close adherence to convention.

SENSITIVE AFFECT; *SVA*

(Inclination to aesthetics, emphasis on cultural values, consequently difficulty in accepting more commonplace standards and adjustment to "realities" of life; often manifested as shyness in the social sphere.)

Largely the opposite of bland; more so than of vital. The definition is essentially in terms of intellectual and social attitudes. "The word does not refer to touchiness"; as it does in ordinary discourse. On the other hand these reaction types are natural escape-routes of the intellectual who is touchy. This is all but explicit in the "shyness," and the reason it is not fully so may be that the pursuits involved safeguard the individual from many situations to which "touchiness" exists.

About one in six of the participants is assigned this trait. As something of a liability in a culture such as ours, it is natural to suppose it less frequent among these participants than in an average college group, or generally. The latter may be true, but it is not clear that these participants have less than their college undergraduate share. *SVA* is not clearly associated with the soundness classifications; there is a non-significant 11 : 17.4 deficiency in the *A* class, the *B* and *C* classes depart negligibly from chance expectation. The inference is that these participants have in their personalities other traits which, as in the case of Unstable Autonomic Function, enable them to deal with this one in a socially integrated manner. In most individuals, it is, as above, looked on as associated with less stable adjustments.

Obviously this use of the term sensitivity means a sensitivity that is selective to certain sorts of stimuli, especially in the ideational field. It is an apperceptive sensitivity rather than an emotional one. Impressions thus take on meanings which they do not have for other persons; but it is a qualitative rather than a quantitative sensitivity. In earlier days of experimental psychology, there was more interest than now in physiological sensitivities, especially of exteroceptors, and there were attempts to relate this to sensitivities at higher organizational levels. "Criminals" for example, were thought by some to be sensorily as well as emotionally callous; to have higher perceptual thresholds than average individuals. Special sensitivities of similar order were postulated for superior aesthetic accomplishments (the term aesthetic is itself of perceptual etymology).[14] In the sense that the artistic temperament over-reacts to sense impressions as well as other experiences, as compared to those not so endowed or conditioned, this is true enough; but there is no present reason to look upon it as associated with lower perceptual thresholds. Poe, who gave a literary stereotype of *SVA* in Roderick Usher, portrayed vividly the overreactions of his personality pattern to crude sensory as well as ideational or symbolic stimuli; but properly specified no lowered thresholds of sense.

JUST-SO; *JS*

(Dependence on orderly routine and regularity; marked neatness; meticulousness, need for system and organization. Liability to upset if established ways of living are interrupted.)

It is the normal analogue of the compulsive behavior that gives its name to a common neurotic symptom; but there it is more restricted to certain classes of acts, which are thought to derive their compulsive value from repressed experience; here it is a trait modifying one's behavior generally, and often favorably. In association with a later discussed trait, Inhibition, it has had a special rôle in psychoanalytic thinking. *JS* is one of the less commonly assigned traits, being ascribed to one in seven of the present group; no reason appears why it should be otherwise distributed elsewhere in the population. It presents occasion for somewhat more specific discussion of native and environmental influences. Up to this point, the traits have been of a character in which the rôle of constitution appeared predominant; from here on, an increased rôle may often attach to the environment. As in the present case; one need no more question that children reared by just-so parents would acquire just-so behavior patterns, than that their language behavior or religious attitudes would be so influenced. But there would be differences in the degree to which these were acquired, and the degree to which they persisted after the home began to be replaced by other influences. Or such a trait could develop from essentially endogenous sources, as apparently it does in the psychoanalytic conception. Conflicts in the personality arise through an environment that crudely opposes the native course of a trait (as the problem of left-handedness has taught), as well as between opposed teachings of the environment, as largely in religion and sex. The present participants may be looked on now as essentially "their own" personalities; otherwise they would scarcely find themselves in the Study. The traits here seen are as constitutionally laid down in them, modified by the environment only in such manner and extent as is consistent with basic integrations.

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[14] For review of this literature cf. Ellis 1895; Lombroso 1891; MacDonald '02.

Actually the present *JS* attributes leave little to be accounted for on an exogenous basis. There is no evidence that they compensate, or are compensated by any other traits in the series. In the soundness classifications there is nowhere a significant departure from the chance expectation; although the *C* class does show (with small numbers) a 3 : 6.4 deficiency for the trait.

Its social value is especially a function of its context. When expressed essentially in overconcern for personal, not to say domestic details, it obviously makes one no easier to live with. On the other hand, wherever sustained attention and precision in the fulfillment of commitments are assets, one is fortunate to deal with persons who are well supplied with it. More of it somewhere, even with a dash of anxiety thrown in, would have served the nation well up to and on December 7, 1941.

The definition alludes to especially disturbing effects when just-so practices cannot be maintained. Here it is relevant to note the manner in which this category arose as a technically descriptive trait. It came through the clinical observation that persons who in their later years developed the condition known as involution melancholia, showed an excess of persons whose earlier life had been characterized by "just-so" behavior (lack of plasticity, restriction of interests, cf. Malamud, Sands, and Malamud '41). During their years of vigor, they were able reasonably to sustain the excessive standards they imposed on themselves. In the years of decline this is no longer possible. It is supposed that some basic personalities are not well enough organized to assimilate the situation, and the ensuing reaction makes up this characteristic and consistent involution picture.

Self-Driving; *SDR*

(Notable self-control, "will-power";[15] ability to force oneself to do things. This energy and accomplishment is a higher ego function and is to be distinguished from the more spontaneous activity arising through strong mood or affect. Behavior is accordingly more motivated and governed by indirect stimuli and distant goals. Often there is a sense of making oneself do things against resistance. A sense of uneasiness is experienced during periods of leisure, procrastination, or neglect of work.)

This trait, which again seems to require an essentially constitutional basis, is assigned to one in seven of the participants. One might also look on it as a trait making for better integrations and as such likely to have a larger representation here than in more average groups, but the evidence of the soundness classifications is against this. There is no relation to the *ABC* classes that is not well to be ascribed to chance.

At the same time it must be looked on as a very important trait socially, ranking in this respect in the same class with the more common Vital Affect. There is this difference. Vital Affect is more of a persuasive force, and operates best in comparatively free, non-institutional settings, as in so-called "high-pressure" salesmanship. *SDR* represents socially, rather the dynamic of domination and operates best where there is an institution of discipline, as in a military setting. In Rorschach terms, the dynamic of Vital Affect is *CF*; that of Self-Driving is *F*+. *SDR* is to the soldier, what Sensitive Affect is to the artist. For the soldier it is an important supplement to the basic personality features already discussed. Without them there can be no great leadership; with them the leadership may be skillful or bungling but it will still be leadership. In the so-called "dashing" commanders, like Sheridan or Anthony Wayne,[16] it is Vital Affect that predominates; limited operations are splendidly carried out, but there would be impatience with the rôles of a Wellington or a U. S. Grant. In Stonewall Jackson this volitional trait appears as outstandingly as ever in the history of this country at least. It may be remarked that this is the very phase in the character of his great superior where biographers seem most ready to sense a drawback (the conduct towards Longstreet after Gettysburg, compared with what would have happened had Jackson been in command, is cited in illustration). To the reader interested in American military history may be suggested the comparison from the standpoint of (*a*) Basic Personality; (*b*) Vital Affect; (*c*) "Will-Power"; (*d*) professional knowledge, of such commanders as Greene, Gates, Arnold, Charles Lee, Burnside, A. P. Hill,[17] Hood, Hooker, Longstreet, McClellan, Sherman, Thomas.

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[15] "Will-power" was the designation originally attached to this trait, but as elsewhere an expression of more limited meaning has been substituted, owing to various irrelevant connotations of this term.

INHIBITED; *IIIB*

(Marked conscientiousness; frequent conflicts about things which are intellectually condoned. Over-developed sense of responsibility; difficulty in emancipation from early moral attitudes intellectually outgrown. Social manner is characterized by a stiffness and lack of spontaneity; conflicts may lead to vacillating attitudes.)

Much of the above is a description of what has become known as "New England conscience," though those to whom it is assigned have no special geographical distribution. It is the trait into which Hamlet displayed such unusual insight. We are left to suppose that this was rather a native trait so far as Hamlet was concerned, but that it should have become so identified with a particular geographical and cultural area, would lend itself to a more environmental interpretation. The considerations adduced in regard to Just-So are pertinent. Probably it can develop without special conditioning, certainly it can be fostered thereby, and again fade out as the conditioning influences are removed.

The trait is assigned to about one in five of the present group. Its relation to the soundness classifications is distinctive in a 6 : 17.4 deficiency in the *A* class, and a corresponding 34 : 21.1 excess in the *B* class. To this extent it appears a liability in "soundness" but the *C* class shows the numbers of chance expectation. It is apparently a limited liability. As with

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[16] Cf. Napoleon's alleged comment on one of his marshals: "If there were two Vandammes in my army, nothing could be done until one of them had killed the other."

[17] The last recorded words of both Lee and Jackson embodied a call for this officer.

Unstable Autonomic Function, to live normally with this trait is evidence of very good integrations in some other respect; those unable so to compensate it to a *C* class rating at least, simply do not come within the purview of the Study.

It is a complex question how far the one in five proportion here shown is representative of larger groups. It seems high; the trait contributes notoriously to the rating of "model child," but at this later age and in this research, it is hard to imagine any tendency to select in favor of it within the college group. It is, however, not unlikely that the cultural traditions represented do embody a larger proportion of this trait than do young American males in general, or the "newer races" of the region in particular. It is not a trait of overt behavior; others have pointed out that these inhibitions do not keep one from doing things, so much as from enjoying them; it is not what one does or does not, but how one feels about it. Otherwise inhibition in southern California could pass for mood elevation in Vermont.

PRACTICAL ORGANIZING; *POR*

(Lack of "subject-matter" interest. Not theoretical, speculative, scholarly. Course work better in organization than in analytical or creative work. Interest in organizing and managing; satisfaction in getting things done. "Higher Values" are not striven for and the essential outlook is pragmatic.)

Throughout these discussions, and here especially, it must be kept in mind that one is describing traits, not personalities. Definition states what is necessary to the assignment of the particular trait; it can make no commitment as to what else the personality includes. Thus when one speaks here of higher values being not striven for, it means that *POR* can be and often is, assigned in the absence of such striving, but not at all that *POR* is incompatible with such striving. Indeed it is likely that no other culture has combined them in more individuals than has our own. But this combining does not become effective until a much maturer age than is here represented, or normally take place in earlier years. We may look upon this earlier period as one where practical-organizing and other ego directed traits are properly dominant, as are *id*-traits during infancy; development of superego functions (higher values) in adolescence, even late adolescence, may be precocious, and unfavorable to normal maturation. The absence of generalizing interests or striving for higher values, in a practical-organizer at this age therefore carries no more invidious implication than does the absence of a beard in a ten-year-old.

This trait is next to Basic Personality Highly Integrated and Pragmatic in the frequency of its assignment, which is close to one in three of the participants. The culture pattern of this country, with its relative emphasis on the values which need this quality to achieve them, would foster its development, so far as it can be fostered by conditioning. Indeed, that it is not present in larger measure, rather suggests limits to which the environment can develop it. *Prima facie,* it is a trait associated with stability of conduct, and the 51 : 37.0 excess that it shows in the *A* soundness classification, while significant, is smaller than one might expect. The numbers in the *B* class are at chance expectation, but the *C* class shows a deficiency of 7 : 18.2. The culture pattern being what it is, one should expect individuals who do not have or cannot acquire a good measure of this quality, to show more difficulties and deviations in their conduct; and fewer persons to reach outstanding positions without it, than has been the case in some of the older cultures.

Notable deficiency in this trait would operate against inclusion among the Study participants. Thus it probably has a greater representation among them than in the local undergraduate group, and in the population generally. Although the differences are less marked, it resembles the Vital Affect group in having one of the smallest representations in the $0-4,999 income class, and one of the largest in the $25,000 and up class.

SELF-CONSCIOUS-INTROSPECTIVE; *SI*

(Over-awareness of one's own thoughts and feelings. A heightened sense of being observed by other people, in the presence of contrary insight. Inability to behave with directness and ease in social situations.)

This is the first of the traits which are comparatively "cerebral," concerned more specially with thought processes, and where a group selected like the present, occupies a distinctive position. Any sort of self-analysis is more likely to take place in the intellects from which the recipients of higher education are chosen. Less developed minds escape it completely as Walt Whitman remarked of the subhuman,

> "They do not lie awake in the dark and weep for their sins. . . ."

but it is a price which considerable numbers are called on to pay as they reach the levels of intellect that are here represented. It is assigned to no less than one in four: is thus clearly not incompatible with meeting the overt demands of good adjustment. To a certain extent its properties are implicit in other traits of the series, whose relationships remain to be examined (p. 194). In respect to the soundness classifications there is a 13 : 24.4 deficiency in the *A* class. The *B* and *C* classes show excesses less marked, and outside significant limits. One is less penalized in these soundness ratings than might be understood from the definition, and it is apparent that compensating qualities are often available.

Undoubtedly the environment can do much to foster this trait;[18] the extent to which it is helpful or damaging must depend on strength of basic personality. The "heightened sense of being observed by other people" may be understood as an over-concern for what people think, not in any schizoid, ideas-of-reference sense. The same persons, in the surroundings of medieval Europe, would be less concerned about other people's observations of them, and more about God's. In its present form, the idea expresses the secularism of the current era. Indeed the process, viewed in perspective, has much in common with the traditional religious exercise of meditation.

Ideational; *IDL*

(Exemplified by interests in scholarship, literary criticism, philosophy, social problems. Tendency to avoid routine and problems of practical life. Impatience with the careful procedures of laboratory work; and with any work that does not stimulate thinking as such.)

This definition is the substantial converse of the Physical Science Motivations. *By implication, it embodies some of the "escape" features there mentioned.* Escape is a value-word, particularly in this sense, and it is not less fair to speak of some dealings with things as affording escape from mental activity. In the present data, however, the tendency is to take the less favorable view of the ideational when it is an outstanding trait. Whereas Physical Science Motivations showed negligible relation with the soundness classifications, there is with *IDL* a 14 : 20.4 deficiency in the *A* class and practically the same excess in the *C* class, the *B* class being nearly at chance expectation. While hardly up to statistical "significance," the trend is suggestive.

As elsewhere, constitution sets limits of potential within this trait, but its development is highly dependent on the stimulus the environment is able to provide. There is no reason to believe that measurable change in human intellectual capacity has occurred within historic times; and it is still debated as to whether there are at present any important racial differences in capacity for ideational life. The difference in the ideational life of the modern metropolis and the community of the savage, or even of ancient civilization, is heavily conditioned environmentally. Environment accounts in much smaller measure for these differences in the present participants, or such differences between individuals of U. S. culture generally. In fact the social survey discloses no feature of economic or educational life that is significantly related to the development of this ideational trait. Constitution must be held to account as above for differences of this sort and degree. Distinction should be preserved between this trait, which is an attitude, and the capacity which is the essential subject of "intelligence" tests. The attitude is hardly possible without considerable degree of capacity; when the attitude is far above capacity it carries especially "escape" implications. On the other hand, a high degree of capacity can exist without the ideational interest; as it does among the present *PSM*'s for example.

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[18] It has been elsewhere thought to "reflect a confusion of adolescents, especially in an atmosphere where conformity to unaccustomed norms is expected, and where definitions of conduct and rôles are often new to those from other backgrounds."

IDL is assigned to about one in five of the participants. It probably does not differ much from this proportion in the college as a whole, but is naturally concentrated among the recipients of higher education.

CREATIVE-INTUITIVE; *CI*

(Good abilities in self-expression; largely associated with the contemplation of artistic or literary career; frequently negative attitudes towards logical, objective, and analytical modes of thought.)

This is the Ideational trait only more so; it is the smallest of all the trait groups, being assigned to about one in 16 of the participants. The power to originate, which is implicit in the name of this trait, does not form part of the above definition; no very marked talents of this nature had manifested themselves in the group at the time of study; and the name may be taken to denote special interest in, rather than realization of, this type of activity.

The smallness of the group is unfavorable to the display of significant relationships. There is, however, a 3 : 5.9 deficiency in the *A* class of soundness, a corresponding excess in the *B* class (10 : 7.2), with the *C* class at par. It is consistent with general opinion on these matters to suppose that a group selected for "normality" as are the Grant Study participants, would show a smaller representation of this trait than would a general population at its intelligence level. Much of what was said of Ideational applies here, though greater emphasis must be laid on native factors. *CI* is among the more distinctive of these traits for society at large, probably the most so in proportion to its numbers; the trait name (though less clearly the definition) denotes the abilities which underlie all achievement in the arts and letters, and in philosophy. The present conception does not deal with intuition and creativity in the sphere of mechanical invention.

The social data yield certain relationships with this trait that meet the present standards of significance. One of these concerns the already mentioned attitudes towards the House system. This social survey group contained nine individuals to whom this trait was assigned; none of these gave "approval" to the system, though nearly half the total group of over 200 do so. There is also comparative disinclination to concede the adequacy of preparation given by the secondary school; this can be understood as an impatience in this type of mind with a course of study necessarily adjusted to more typical individuals.

CULTURAL; *CL*

(Predominant sources of satisfaction through participation in literature or the arts. An artistic career may be followed, or any form of life work as an existence making it possible to satisfy cultural needs.)

Essentially where *CI* denotes creation, *CL* denotes appreciation. The career alternatives mentioned are similarly compatible with Ideational or Creative Intuitive features; Spinoza, at once the philosopher and lens-grinder, offers a stereotype for all three trait-groups. The soundness classifications are close to those of chance expectation. For some purposes, this and neighboring traits could be merged without loss; an essential distinction may be, however, that *CL* denotes appreciation, *CI* productivity, and *IDL* contemplation.

PHYSICAL SCIENCE MOTIVATIONS; *PSM*

(Predominant interest in physical phenomena. Frequent early mechanical interests and aptitudes, preferences for scientific subjects in secondary school, and liking for the manipulations of laboratory work. Natural preference for the inductive, careful qualities of scientific thought.)

The dynamics of this trait are of concern particularly in regard to social adjustments. There have been indications that, in some groups at least, persons mechanically inclined are less socially inclined. How is this to be understood psychogenically, and with reference to the present group? The mechanical-physical-quantitative concerns as we see them here could be spontaneous, inborn, or they could be reactive to a disinclination for the social-verbal complex of activities. In many persons at least, both scientific and social accomplishments are so developed that neither can reasonably be looked on as reactive to a deficiency in the other. Moreover, the mechanical-scientific-quantitative complex needs only to develop such social competence as is within the reach of any normal person. It is generally harder to be scientific than amiable; and the socially inapt are less likely to turn in this direction than in verbal or artistic ones. Certain interests in "Nature" can also be supported in this fashion.

A rough check on these views is available through the soundness classifications of the present data. These are heavily loaded with social competence, and anything which seriously penalized the individual in this sphere would show out in a deficiency of *A* and excess of *C* classifications. Actually the distribution for *PSM* is near that of chance expectation. In spite of the numbers being small, about one in eight of the total participants, it does not seem that the *PSM* group has recruited its membership from individuals either more or less socially adjusted than the group as a whole. It is doubtful if a liberal arts college attracts a normal proportion of individuals motivated in this way, as the technical schools would draw them off; but neither is there reason to suppose any collegiate selection along the sociability lines here under discussion.

INARTICULATE; *IAT*

(Notable inability at self-expression in language. Conversation likely to be meagre and matter-of-fact, especially concerning personal feelings and experiences. It is ascribed not to inhibition or unwillingness, but to a lacking richness of inner experience and associated thought.)

This is another relatively neutral trait. It also adheres close to chance expectation in its occurrence with the soundness classifications. It can be understood on either a native or conditioned basis, and the present rôle of nurtural influences should be comparatively easy to assess through the clinical records. The group is relatively small, some one in eight of the participants. How this proportion would compare with other groups is difficult to say; there is no evidence that it influenced the selection of the participants, and has been seen to offer no liability within it.

There may be noted in the definition certain resemblances to the Bland Affect category, and the two have statistical affinities that are later touched on (pp. 196, 197). In the social survey, each showed some trend to excess of House system "approvals" and a deficiency of "approval with reservation." The parallel must not be overdrawn, for the "Good Soldier Schweik" (Hasek '30), who personifies Bland Affect, would not furnish a prototype for *IAT*; quite on the contrary. It is difficult to find one; for the trait lends itself neither to literary interest nor to historical distinction. Something very like it is to be found in Dickens' portrayal of Jonas Chuzzlewit, although in the total character it is far outweighed by less amiable traits.[10] Ham in "David Copperfield" embodies a perhaps more acceptable example.

Verbal Facility; *VF*

(Originally listed as "Good Formulation and Richness of Language Expression," which covers the definition of record.)

Bearing in mind that this is a qualitative, not quantitative trait, not simple loquacity that is, it seems to presuppose concerns of the Ideational, Cultural, and Creative-Intuitive categories. It is assigned to the participants in the proportion of about 1 to 5.5. There is little reason to look on it as distributed otherwise in the college as a whole, though like the rest of the ideational complex it would be much better represented there than in the population at large. The relations of *VF* to the soundness classifications are in all cases close to par, and it may be recalled how generally this has been the case with the other intellectual functions. This accords with what is already indicated through the quantitative studies of intellect, the slight and variable relationships between it and the functions which make up "character." It is not to be accounted for by the small segment of the human range, at least for intellectual functions, that is covered in the present series of observations.

The data suggest some association of the trait with earlier attendance at a progressive school. Like other intellectual traits it has a large environmental factor, but the school probably shares its influences with the households that use this sort of educational agency; just as these households could also contribute innate characteristics favorable to this trait.

The definition is not specific on a rather important point, whether the expression is oral or written. If oral, it implies a social adjustment that is absent in written expression; it is an old criterion of "introversion-extraversion" that the former is better in written expression, the latter in oral. Actually the ratings are based essentially on the use of speech, and the substantial lack of relation to social functions in this trait, seems to operate against the above introvert-extravert criterion. But it is well known that individuals socially inhibited often talk more fully and freely in privileged, one-to-one situations which are the context in the present Study. The talk-write criterion is basically sound, but only for talk applied to a plurality of hearers.

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[10] The following is a nearly complete cast for the remainder, with this author's characters revived as it were for a costume-party embodying the present trait-series: *Unstable Autonomic Function*, Uriah Heep; *Basic Personality, High Integration*, Mr. Wardle, Jacques Defarge; *Basic Personality, Lesser Integration*, Sydney Carton; *Vital Affect*, Sam Weller, Mark Tapley; *Bland Affect*, The Fat Boy, Mr. Pecksniff; *Sensitive Affect*, Mr. Snodgrass; *Just-So*, Tim Linkinwater; *Inhibited*, Tom Pinch; *Self-Driving*, Dombey, père; *Physical Science Motivations*, Sol Gills, *Ideational*, Mr. Crimple; *Creative-Intuitive*, Mr. Tigg Montague; *Good Formulation and Richness in Language Expression*, Serjeant Buzfuz; *Sociable*, Mr. Pickwick; *Asocial*, Mr. Nadgett; *Pragmatic*, Major Bagstock, Mr. Weller, *père*. *Human Values*, Mr. Charles Cheeryble; *Lack of Purpose and Values*, Richard Carstone, Mr. Micawber.

SHY

(Marked tension in social situations; manner embarrassed, reserved, awkward. Fundamental liking for people, and regret that this quality leads them to avoid social contacts they would enjoy if they could feel natural. With maturation a gain in poise and self-confidence, but at a later age and more slowly than is usual.)

The dynamics of this trait are further discussed in the section to follow. It is there based on an initial sociality, overlaid by psychogenic factors that make its expression difficult. The latter is necessarily environmental; cannot the former also be established by an earlier phase of the environment? Consider an over-protected child who adjusts to overprotection only too well. When such a child has to meet other children on equal terms he will not have acquired the proper means to deal with them, and will probably be rejected; if not an inevitable development, shyness is a very likely one. This dynamic of shyness may be important in the population at large, but much less effective in a group of the present selection.

Two other factors have relevance to this group, and probably elsewhere. One is chiefly constitutional, based on maturation in different respects at different rates:

> "Thus, a boy may be small for his age, and this may be reflected in his athletic ability or his knowledge of the world. In consequence, his associates may tease him, raising an additional social barrier; yet he may be intellectually well advanced beyond his age. In the present group, retarded physical growth was relatively unimportant, though other immaturities were found. A certain boyishness in appearance and manner, a distinguishing naiveté sometimes set some of them apart from others of their age, and was commonly expressed by a peculiar shyness. The suspicion that this shyness was indeed a manifestation of immaturity was confirmed by the considerable change that took place in manner and attitude during the subsequent two or three years" (W. L. W.)

The other is chiefly environmental, and was alluded to in the above paragraph:

> "(Inferior athletic participation) was apt to be described as having been most disturbing during early years of secondary school. At this time those not capable of competing in sports with even average success felt most 'out of it,' found it difficult to make friends, and be recognized

> as a 'regular fellow.' Several outstanding instances of inferiority feelings were intimately bound up with, if not actual results of, this forced aloofness in the school years. Friendships were apt to be restricted to others like them, with an ensuing diversion of energy to less healthy forms of expression; if not indeed a lessened activity in general. A distinction, however, should be made between those who gave up trying to participate in sports, and others who, though lacking ability of team grade still participated as much as they could, and got a full quota of exercise through informal sports and games" (W. L. W.).

According to the concluding sentence the disability is, as usual, far less important than the attitude or reaction to it. This depends on something that happened previously, in which constitution and early nurture can both have a part, but the effectiveness of the early nurture depends on constitutional responsiveness to it.

The trait *SHY* is assigned at the rate of about 1 : 5.5 participants; that is, in a proportion similar to Sensitive Affect and Verbal Facility. Probably it would be assigned at a higher rate in populations not subject to this type of selection. There is a 9 : 17.7 deficiency in the *A* soundness classifications, a 34 : 21.5 excess in the *B* class. Surprisingly, the *C* class again has a deficiency of 5 : 8.7. Apparently the sort of shyness here observed constitutes a relatively slight liability in soundness. And there is always the question of compensating qualities as mentioned under Unstable Autonomic Function. The shy person must be specially good in other ways, to get into this group.

In the social data survey, only the Asocial and the Less Integrated groups had a smaller proportion doing remunerative work outside of college. Though probably for different reasons, the *SHY* shares the *VTA*'s prejudice in favor of the preparatory school over the college teachers.

It may be felt that there has already been too long delay in raising the question of specificity in these traits. It is possible and even probable that a person will be shy in some social situations and not in others; the meaning of the trait assignment is and can only be, that he is more shy than other people in the situations to which people are normally exposed. The conditions of shyness are (*a*) being faced with a class of situation which from native or nurtural causes one lacks the behavior patterns to meet, (*b*) tendency to react to such a situation with embarrassment. *Mutatis mutandis,* these are the lines along which the question of specificity in any of these traits has to be resolved. The judgment predicates a normal and reasonably frequent situational pattern. It is judged that in such a setting, the trait will be exhibited. (On the influence of maturation in trait specificity, cf. Allport, '37, pp. 136-138; and more generally, pp. 248 ff.; 316-319; also in Hunt, '44, MacKinnon, pp. 25 ff.).

ASOCIAL; *ASC*

(Relative unimportance of close friendships and social life generally. Satisfaction with own company. An interest in "things" is important by comparison. Where well marked, a lack of feeling and lack of intuition for human behavior may be described. In contrast to the *SHY* group (above) there is no expressed desire for a greater social life.)

This is one of the less common traits in the present material, being assigned to about one in eleven of the total. The total group being clearly selected against it, it should be present in greater proportions elsewhere. As in the case of *BPL,* to which it is otherwise comparable, no one assigned this trait is given a soundness classification of *A.* The *B* class is practically at par, the *C* class shows a 12 : 4.4 excess. It is evident that the concepts of soundness and asociality are here so adjusted as to be mutually all but exclusive.

The *ASC* category has certain extreme positions in the social data that are worth mentioning, although they do not meet the criteria of significance as here laid down. Only the Creative-Intuitive have a larger proportion of their membership in the lowest income group. This would suggest a lack of sociality in part secondary to economic factors that limit its deployment in this setting. An elsewhere suggested possibility (doubted by W. L. W.) is also a "rejection of friendliness as a protection developed by low income boys who feel unwanted, not belonging in a more favored society." Again, only the *BPL* group has a larger proportion of its members who were dissatisfied with the Harvard course; and conversely, no group has a smaller membership that was quite satisfied with it. Remembering the association with low income, it is striking that only one group, again *BPL,* had a larger proportion of its membership who had done no remunerative work outside of college. The general trend of these data is consistent with regarding the type of asociality here represented, as actually related to somewhat less soundly integrated personality.

Like others, the trait described can have different origins, and correspondingly different meanings. Whatever part constitution may have, there is no doubt that environment can induce this as well as its Sociable opposite. The characteristics that an individual shows in this respect, represent an interplay of these constitutional factors, with environmental forces that can well begin with the earliest maternal contacts. During the past generation, and somewhat under psychoanalytic influences, these have been intensively studied, and their operation may be regarded as comparatively well understood (cf. in Hunt, '44, Mowrer and Kluckhohn, pp. 85 ff.). There is, however, some tendency to exaggerate or minimize them in accordance with otherwise determined nature-nurture attitudes. The "personal equation" contains both x and y; no personality is to be understood on an essential basis of constitution or environment. The dynamics of *ASC*, as well as the Sociable and Shy of this series, are a function of what and how benign or malign nurtural (including infantile) influences interact with what constitutional bias. In the immediate further exposition one must accept the limitations as well as the advantages of schematism. According to the presence or absence of other traits, such as vital affect, strength of basic personality, practical organizing capacity, etc., resulting social types benign and malign, are in general as follows:

When both native and nurtural influences have been of a socializing sort, the issue of personality is what has been called "syntonic." With otherwise average endowments, the good fellow; the regular guy, "folks"; less favorably, the yes-man; in general a conforming tendency to the traditions and conventions of the group. With superior endowments, the best teacher; the most successful politician or man of business. Conservative tendencies predominate; leadership is present, but tends along the more trodden paths.

This is a background that would only rarely develop in a malign way. The occasional offender, under incidental motivation or antisocial leadership, would represent the essential dynamics.

Or again, given a native bias of asociality, with socializing nurtural influences. With the very great premium that in our culture is placed on sociality, contrary native bias must be fairly strong to make itself overt; but when it does so, it is in a way that the group accepts and respects. There need be no lack of surface amiability; but when business or political leadership develops on this foundation, it is known for efficiency rather than warmth. Appointive offices are held more commonly than elective ones. Social tendencies are more liberal and exploratory, even radical. The greatest social leadership may develop, combining wise and benign motivation with independence of tradition and convention. Our culture has a stereotype of this outcome in Abraham Lincoln. On the intellectual side, the investigator and inventor rather than the teacher, but with sensitivity to the social bearings of one's work.

In the rarer malign development, the acquired sociality is pressed into the service of an inborn nature insensitive to social ties and standards. It is used in exploitive functions; the "good bad man"; the racketeer, exploiting society for a restricted in-group.

Given a native sociality, with an asocializing nurture, e.g., the socially well-constituted but "rejected" child. This is the foundation of the trait incorporated in the present series as *SHY*. By definition there is impulse towards social contacts, but no patterns have been acquired adequate to making them. If these are not acquired in later years, the personality may develop defenses that simulate an inborn asociality. In the presence of sufficient intellectual or artistic endowments, society will make allowances for this trait, and it is no bar to success along lines of such a sort.

Malign developments on this foundation appear negligible, except as a weak basic personality comes under antisocial influence.

Given asociality both native and nurtural. This is the soil in which the "schizoid" personality type develops. While the present selection of participants has found places for the Sociable, the Asocial and the Shy, it has found none on which to base a category such as this. Exceptional mental endowments are needed for social acceptability and material success in these circumstances; and the social usefulness of these successes is problematical. The ivory-tower investigator, the solitary "Nature-lover" represent benign outcomes. The less endowed issue in the recluse and the harmless eccentric.

It is by far the most important foundation for malign outcomes. Both the given conditions seem necessary for the persistent offender, the actively antisocial and hostile, the "born criminal." Given proper endowment in other spheres, leadership techniques may be learned, and as above, put into the service of the most socially destructive motivations, as those now living have the best of cause to know.

No claim is made of any nosological relationship between these similar though less pronounced abnormalities of conduct, and the psychoses known as schizophrenia.

SOCIABLE; *SCB*

(Spontaneous friendliness and liking to do things along with other people. Liking to make new acquaintances, and general ease in social relationships.)

With the exception of Vital Affect, this trait evinces the most positive association with the "soundness" classifications. In the *A* class, there is a 42 : 22.6 excess; in the *B* class, about a 16 : 27.4 deficiency, and in the *C* class a 3 : 11.1 deficiency. As in the case of Vital Affect all these relations have *CR*'s over 2; the *C* class is so distinctively small in numbers as to suggest individual study. *SCB* is assigned at the rate of 1 to about 4.5 participants; as this seems to be so large a factor in their selection for the research, it may be presumed to occur more frequently here than among undergraduates or the population at large.

From a secular standpoint, few if any traits can be regarded as more desirable to possess or inculcate; one is thus specially concerned with the extent to which environment may develop it, and the sort of environment that may do so. In one way or another, this is recognized as a large part of educational objective. A good test of one's nature-nurture attitudes is the extent to which one regards this trait as capable of nurtural development. In this question, a critical rôle is played by the studies of body-structure, for these somatic attributes are of all the most constitutionally determined, and in the measure that psychological traits are related to them, one has a gauge of constitutional factors in these less ponderable traits. Certain of these relationships may now be regarded as established in principle; and the physical anthropology of the present research is expected to clarify a number of details.

That is to say: according to various native attributes of the human individual, one may expect to find him susceptible or resistant to socializing influences. Among these native factors, the comparatively clear rôle of intellectual capacity may be briefly outlined, although this rôle is small in the sociality of those selected like the present participants. The congenital idiot's susceptibility to social standards is substantially nil, and it increases with the increases of *IQ;* but just to what point it is impossible to say. It has repeatedly been demonstrated that intellectual capacity plays little or no part in the social qualities of the normal adult. There are not wanting opinions that as intellectual capacity advances beyond a moderate critical point, social qualities diminish;[20] there is in the files of this writer material for no minor clinical study to confirm the work of Thom and Newell ('45) on *The Hazard of the High IQ.*

At any rate, beyond an indeterminate limit which is probably below the average adult intellect, native intellectual capacity ceases to play an important part in socialization. Other native factors in sociability are obscure, but to some extent have been made out in body-build. One-sidedness of present knowledge about the human personality is nowhere more manifest than here. A dozen categories exist of individuals comparatively difficult to socialize—schizophrenia is a chief example—but nothing resembling them for those who are similarly assets to society. Of course the conditions for systematic observation have been less favorable. It is however, a hypothesis in the present research that there exist equally distinctive types of healthy and beneficently constituted individuals, whose recognition has a contribution to applied sociology which is not less than that of schizophrenia in psychiatry.

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[20] "Guy don't need no sense to be a nice fella. Seems to me sometimes it jus' works the other way around. Take a real smart guy and he ain't hardly ever a nice fella." (John Steinbeck: *Of Mice and Men*). An answer is that a real smart guy who was also a nice fella would hardly ever be observed in the surroundings where this was said. Every profession has its technically able members who do not advance because of social incompetence, as well as the converse.

"He is a perfect illustration of my old saying that no gentleman can be a philosopher and no philosopher a gentleman. . . ." (Holmes-Pollock *Letters*, p. 239).

With an inevitable, and sometimes underestimated, allowance for cultural norms, it is the quality of a "free" culture to allow a maximum of latitude to an individual's development along lines that are natural to him. Hence the qualities, social and other, in these participants, who have grown up in a relatively free culture, are, comparatively speaking, their constitutional ones, and could easily lead one to underestimate the modification which a highly controlled environment can effect, despite individual differences in resistance. The totalitarian state has recently given far-reaching demonstrations of this kind, which compel attention in all objective thinking about nature-nurture and which are still in progress as this is written.

At the stage of maturation represented by these participants, one's socialization is fairly summed up at the simple level of the *SCB* definition. As related to subsequent careers, particularly as wider and graver responsibilities become involved, these qualities, while continuing to be valuable, become less sufficient for the concept. A competitively organized world demands other qualities besides those of benign conformity. Considerations adduced under *BPH* and *BPL* may be recalled at this point, and were further developed in the section just preceding.

Pragmatic; *PGC*

(Essentially practical outlook, little concern for ultimate purposes and values. Generally conforming and conventional. Interest in establishing a family and supporting it comfortably. The problems of getting ahead in life are dominant over cultural and social values.)

It will be noted how close is this definition to that of Practical-Organizing. Yet a clear separation of meanings is intended; the designation of Practical-Organizing denotes activities, and Pragmatic, rather attitudes of mind. Sancho Panza was thoroughly pragmatic, but his Baratarian adventure displayed little interest in or aptitude for organization. John Silver might reasonably be said to have combined the two qualities; but St. Paul, while he has had few equals as a practical organizer, can hardly be thought to have suited the above specifications for Pragmatic.

The two traits are here assigned in nearly equal numbers, not quite one in three; but as they are assigned to the same individual only two-thirds of the time, it appears that some distinction has been made between them, along whatever lines. The soundness classifications are practically coincidental in numbers, and the Practical Organizing description applies equally here. The 52 : 38.2 excess that it shows in the *A* soundness classification, is smaller than one might expect. The numbers in the *B* class are at chance expectation, and the *C* class shows a deficiency of 8 : 18.8. In the variables of the social survey, they are especially associated with satisfaction in the Harvard curriculum, with numbers of close friends, and with attendance elsewhere than at a progressive school. What other meaningful statistical difference there is, will have to be sought in relationships with others of the trait series, and with variables to be later considered, as career plans.

Irrespective of whether distinction of Practical Organizing and *PGC* is or could be made for individuals during the stage of development here involved, there is no question that a valid distinction exists for the adult world. First, as above, Practical Organizing relates to conduct, *PGC* to thought. Second, Practical Organizing implies a wider range of function, which may involve many other and unrelated individuals, and very broad social goals, as already illustrated. The *PGC* attitude is in the above definition referred to a much narrower "self," and to an immediate environment dependent on that self.

Social Science Motivations; *SSM*

(Strong interest in government, foreign affairs, social problems and movements. Desire to participate in work which will lead to improvement in social conditions. Distinguished from the Human Values group by more concern for abstract social problems than for individual and personal relationships.)

This trait appears in earlier nomenclature as Political, which is altered because of different meaning commonly attaching to this term.[21] It is a more intellectualized trait than Human Values (which follows). It can be reactive to social ineptitude, for these interests preserve a social orientation, but make less demand on "friendliness" than do contacts with actual fellowmen. All socio-economic philosophizing towards departures from present forms of organization group themselves in this category, reactive to discontents, divine or otherwise, with existing order. Its relation to the soundness classifications is about as in Human Values, the excess of *A* grades is a little less, the deficiency of *C* grades a little more pronounced. In the social survey it may be noted that the higher income groups tend toward this trait rather more than do the lower income groups.

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[21] There is an anarchy of words as well as a "Tyranny"; the use of words with currently accepted meanings, in other meanings, after the fashion of Humpty-Dumpty. Psychoanalysis set a further influential example, in its usage of *sex;* the present nomenclature has not wholly escaped it.

SSM is an essentially culture-determined trait. An intellectual atmosphere is favorable to its development. Socio-economic frustrations would be likely to have such effects in the intelligent, and presumably do, but not in the group here selected, as has just been pointed out. Its general distribution in these participants is a little more frequent than 1 : 6; it should vary a good deal in other groups, according to forces making for an intellectualized outlook, and general motivations, e.g., economic, tending in the direction of social change.

HUMAN VALUES; *HV*

(A dominant interest in people; a knowledge of people and a kind of work which will bring one into contact with people is the strongest motivation for life-work.)

This trait appears in earlier nomenclatures as humanistic, which is altered because of different meaning commonly attaching to this term. The distinction of *HV* from Sociable is that Sociable is concerned rather with other individuals, on a "man-to-man" basis; *HV* more with relations to other people in general, and largely on an institutional basis, as the status of a physician, teacher, etc. Accordingly, there is marked emphasis on life work. It is not quite so frequently assigned as Sociable, about in the proportion of 1 : 6.5, but only a little over half of these cases are also rated Sociable. It is possible too, that Sociable in the sense of Friendly (Heath '45), emphasized benign features more than does *HV*, for interest in people can be an instrumentalizing rather than an altruistic interest as with W. S. Gilbert's genial ogre,

> Why do I eat good children? Why?
> Because I love them so! . . .

Relations to the soundness classifications are not of significant degree, though as could be expected there is excess in the *A* class and deficiency in the *C* class, the *B* class being at par. In the social data its principal points of distinction are the few who give full approval to the House System, with the many who are satisfied with the Harvard course; also the presence of none with this trait who are non-committal on these points. It is also well marked in those who have supplemented their college training by remunerative work. All in all, however, it is among the less distinctive of the series, and its essentials are perhaps covered elsewhere.

LACK OF PURPOSE AND VALUES; *LPV*

(Normal incentives and drives are feebly developed. Sometimes, complaint that no values have appeared to make striving in the world worth while. Occasionally a sincere, if so far unsuccessful search for such values is claimed. Often a rather drifting, unenthusiastic attitude, giving the impression of a family stock that is petering out.)

The statement concerning "normal incentives and drives" will not be understood to include the somatic drives, but limited to remoter individual, and social goals. Indeed such individuals as did attempt to live "by bread alone" would be expected to exhibit undeveloped attitudes towards these remoter values. How far there actually exists such an association of strong somatic drives with lack of remoter values, demands inquiry on the basis of individual histories. The nature of the definition implies the relation of *LPV* to the present soundness classifications: a 9 : 19.6 deficiency in the *A* class, and a 23 : 9.6 excess in the *C* class; the *B* class is at par.

In the social survey, the *LPV* group is distinguished in being second to the *BPL* group in the proportion of its members who had been to private grade school; and second to the ideational group in the proportions that had attended progressive school.

The *LPV* trait could be regarded as a disturbingly frequent one, for it is assigned at the rate of 1 : 4.6 cases. Whatever may be the family circumstances, it is difficult to think of any individual in this group as underprivileged to a degree to make this attitude anything like one arising from a normal reaction to frustrations. The definition assigns a heavy rôle to constitution, but if one grows up in surroundings that offer no patterns for these remoter purposes and values, only an exceptional basic personality can develop them. Indeed it must escape from such an environment to acquire such patterns at all. A less organized personality makes no such escape, and this is one of the many cases where nature and nurture play into each others hands. The inadequate endowment produces lackadaisical surroundings for its inheritors to grow up in. A fortunate genetic accident may give a nature robust enough for a successful revolt; but the more frequent outcome is the descending spiral that the definition of this trait implies.

The argument must not be neglected, that in these comparatively sophisticated individuals, the contemporary world situation made some contribution to the assignment of this trait. In the report of the psychiatrist for 1938-39 it is remarked that "a common attitude was summed up by the statement of one man, 'I sometimes wonder why I am going to school and working hard when there is the good possibility that I'll be killed before I'm thirty.'"

III. CAREER PLANS, AND OTHER FUNCTIONS

Vocational choice or guidance is commonly conceived in terms of an occupational name; doctor, lawyer, businessman, clergyman. Among the things that *A University President Has Learned*, A. Lawrence Lowell ('38, pp. 94, 95) pointed out perhaps a special fallacy in this thinking. The diversity of requirements within a given occupation is of the same order as are the differences between many occupations themselves. Lowell clarified these diversities for the legal profession; from the medical standpoint the functions range from those of the surgeon to the pathologist, and the connotations of "psychologist" are hardly less diverse. Industry, operating from the standpoint of selection, has for some time recognized this principle in the writing of "job specifications." These undertake to specify as minutely as possible the requirements of the given task, with a view to matching the worker to them. There has been less readiness to see, correspondingly, that the total assets of the individual must be viewed not with reference to some broad occupational stereotype, but with reference to particular characteristics that might be found in several occupations. Among physicians, a good clinician may or may not be a good hospital administrator or a good laboratory man. But good hospital administrators would probably manage a penal institution more successfully than they would a microscope or an X-ray interpretation. *A fortiori*, most bacteriologists would adapt themselves more readily to X-ray work than to running the hospital or prison.

However, it is fair to suppose that the present participants generally envisage their planned careers in terms of normal stereotypes (cf. Hooton '45, p. 73). That is to say, a doctor is someone who takes care of sick people, a follower of the arts is someone trying to create aesthetic values as in music, painting, or literature. Forming such a career plan has something of the status of a trait in its own right. To what extent are the previous trait assignments reflected in the career plans?

The data are often adequate to illustrate trends in this respect, and although numbers are necessarily small, there are several relationships of significance. In the "soundness" classifications there is nothing of note. As elsewhere in the material, one must be on guard against spurious factors introduced by semantic considerations, as when one finds an excess of engineering aspirants assigned the trait Physical Science Motivations.

The specific career plans (as made by the individual for himself) against which the traits are classified, are formulated (as the traits themselves) on the basis of experience with the histories. The ministry was included for intrinsic interest, but the numbers turn out too few for separate consideration, as do certain other plans that are not classifiable under the categories adopted. These form a mixed group whose trait-relationships are here of minor relevance.

The more distinctive career groups are shown below, with the number of participants specifying each. As the present topic is the relation of career plans to trait assignments, one is limited to the 257 cases in which both are available. Rarely, alternative career-plans are recorded; these are given equal weight in the listings.

The following table accordingly gives (*a*) the career plan as classified; (*b*) the number of participants specifying each plan, with (*c*) its percentage of the total 257; (*d*) any category named therewith as an alternate plan (Table 2).

The figures in Column *c* may be compared with analogous data compiled by Dr. Roswell Gallagher of Phillips Academy, Andover, and cited by his

TABLE 2
CAREER GROUPS

(*a*) Career plan	(*b*) Numbers specifying plan	(*c*) Per cent	(*d*) Alternate plans
Arts	17	6.6	0
Business	57	22.1	Science 1, Public Relations 1, Law 1, Teaching 1
Engineering	13	5.1	Farming 1
Law	27	10.5	Teaching 1 Business 1, Public Relations 3, Medicine 1
Medicine	43	16.7	Law 1
Physical sciences	16	6.2	Business 1
Public relations	22	8.5	Law 3, Business 1
Teaching	30	11.3	Law 1, Business 1
Miscellaneous	42	16.3	Engineering 1
Deduct for alternate Plans	10	3.9	

courtesy. The career categories are sufficiently alike, and the percentages of the Academy seniors compare with the present, for Medicine, as 13.4 to the present 16.7, substantially similar. For Teaching, on the other hand, the figures are (Andover) 3.7 : (Harvard) 11.3; college would select those headed for teaching, but in peacetime practically the entire Phillips Andover population goes to college anyway, so that the change is either maturational or a selection of this college by those with this plan. Similar considerations apply to the Arts, where the proportion is (Andover) 1.8 : (Harvard) 6.6, but the stimulus of the College environment is possibly more effective here. Public Relations compares as 1.8 : 8.5; factors here are broader stimulus of the college acting upon maturation, possibly also the selection of the present College. The figures for Law are similar, 7.3 : 10.5, and for Business strikingly so, 22.6 : 22.1. Scientific Research is similar, 4.4 : 6.2. Pronounced negative selection is natural with Engineering, 21.4 : 5.1, as not many with this career plan preface it with a liberal arts degree.

The several types of career are now reviewed in relation to certain more relevant trait assignments. In this respect the Arts present relatively distinctive features. The term must be understood broadly, as in Liberal "Arts" college. It has an 8 : 2.5 excess in the Less Integrated Basic Personality group, conformably to the common stereotype of "artistic temperament." In a somewhat similar direction, it has a 10 : 2.9 excess in the Sensitive Affect group, and a 7 : 2.7 excess in the Dominance of Mood group. Similar excesses are shown for the ideational subseries; the proportion for Creative-Intuitive is 9 : 1.1. Of the entire 17 giving this career plan, 14 are assigned Cultural, and 11 are assigned Verbal Facility. There is also an 8 : 3.6 excess for Sociable; the Arts career plan thus associates itself with more than ordinary activity in affective, ideational, and interpersonal spheres. This last however is limited, for the above excess in Sociable is accompanied by total absence of Human Values in this career plan (Human Values may be recalled as itself somewhat a function of other career plans, cf. Medicine, below). The one negative association of significance is, as might be expected, with Practical Organizing, 0 : 6.3. Physical Science Motivations might be in this class if there were more cases; Pragmatic is surprisingly at par, as also, was Unstable Autonomic Functions.

In the Business career plans one would look for a configuration very different from the above. There is a deficiency trend of 3 : 7.8 for Unstable Autonomic Functions, of 6 : 10.7 for Inhibited, of 1 : 3.5 for Creative-Intuitive. The remaining ideational and affective categories show nothing pronounced, neither do the interpersonal. Heavily significant excesses, of substantially 21 : 36.0 proportion, are shown for Practical Organizing and Pragmatic, while Physical Science Motivations again produces a deficiency of 1 : 6.9. The lack of significant associations in this relatively large (business) group, as compared with the preceding (arts), brings out the point mentioned at the outset, of the great variety of personality types that may find a vocational home within it, as compared with the more specialized requirements of the "Arts."

Engineering is too small a group here for more than tentative support to what has been otherwise indicated; its relation to Physical Science Motivations is naturally of the highest, a 9 : 1.6 excess, with a 10 : 5.0 excess for Pragmatic. This latter feature it shares with the Business group, while departing extremely from it as to Physical Science Motivations. With the closely allied Physical Sciences career plan, it is the only group with a significant relation to Inarticulate; in both cases excess, here as 5 : 1.8. As with the Business plans, there are elsewhere no marked group associations with the affective, ideational, or interpersonal spheres. What might be the case in particular individuals, is another matter. (A small group listed under "Production" shows no significant departures from chance. If it is consolidated with "Business," no changes of moment are introduced.)

Although the Law offers ample scope for the attributes here conceived under Vital Affect, it does not appear at this stage of their development as an attractive career to those so equipped. The deficiency trend is 2 : 5.5. Bland Affect on the other hand shows a more distinct excess, 10 : 4.8. While there are types of legal career that fit this attribute also, it is doubtful if the two are so connected in this instance; more likely that, at this stage, the Law plan represents an absence of specialized career interest. Three traits are unrepresented among the Law plans; Creative-Intuitive, Physical Science Motivations, and Shy. The Creative-Intuitive group is as such too small for this to have meaning; the deficiency trend with Physical Science Motivations is as 0 : 3.4, with Shy it rises to significance, 0 : 4.9. This last is as would be expected by almost anyone, and a negative trend for Physical Science Motivations is in accord with relationships previously observed for the *PSM* trait-complex.

Medicine is first distinguished for its contrast to Law in the affective traits; an excess trend for Vital Affect, 14 to 8.7; substantially par for Bland Affect and deficiency trend for Sensitive Affect, 3 : 7.3. Conformably to Sensitive Affect, further deficiency occurs for Ideational, 3 : 9.0; and a dominant relationship here is one of the strongest in this section, an excess of 16 : 6.7 for Human Values. It is apparent that the medical career fits the conception of

Human Values (cf. p. 164) more closely than any other under consideration, and it actually absorbs nearly half the number for whom Human Values is listed; more than the next two, Teaching and Business together, though these aggregate more than twice the number of those planning medicine.

Ensuing national events placed the medical career in a special position as compared to the other careers considered. It was placed at a premium, various others at comparative discount. The medical career thus offered special opportunity to compare the actual following of the plan, with its undergraduate projection. Of the 43 participants who actually planned for medicine, 32 subsequently entered medical school. On the other hand, seven men who had not indicated plans for medicine, also entered medical school, raising to 39 the number actually embarked on a medical career. Naturally the motivations for such action are different from those obtaining in more normal times. But little difference can be looked for in the trait distributions of the total planning and entering groups, as their constitution is so largely identical. In spite of the smallness of the numbers, some comparison may then be offered of (*a*) the 11 who planned medicine but at least temporarily gave up the plan, and (*b*) the 7 who had not planned medicine but who actually turned to it.

For the soundness classifications the data are as follows:

Soundness class	*A*	*B*	*C*
Gave up or postponed medical plans	5	4	2
Took up unplanned medical education	4	0	3

If the indicated trends are actual, there is a notable excess of the *A* soundness class, which also characterizes the total groups of 43 and 39. There are suggested two orders of motivation for medical career not previously planned (it is distinctive of the actual medical career plans that they date far back in the individual's life). One motivation is associated with the *A* soundness class, the other with the *C*; the *B* class, the most frequent for the material as a whole, is unrepresented here. In the pattern of traits, those who temporarily gave up the medical career plan compare with those who switched over to it, mainly as follows: The Vital Affect group lost 5 of its original 14, gained one. In Verbal Facility, the group lost 4 of its original 9, gained none. Social Science Motivations lost 4 of its original 7, gained none. Physical Science Motivations on the other hand lost none of its original 4, gained 3. The trend of the comparison is towards a giving up of the medical plan by those of the more active social reactions. The medical career plan has been recorded for three participants also assigned

Lack of Purpose and Values. All three relinquished it under the special circumstances.

Clinically, there is no doubt that a variety of motivations exists for all the career plans here formulated, although consistent patterns of traits for them have commonly appeared hitherto. The Public Relations plan lends itself largely to such divergence in motivations, and this is reflected in the pattern of its trait-relationships. First to be noted are marked excesses for Sensitive Affect and Ideational, respectively 9 : 3.8 and 12 : 4.6. These are not as has been seen, relationships that would follow upon interests in human beings as such. The excess trend of 8 : 4.2 for Inhibited carries again rather a contrary suggestion. On the other hand an excess of 12 : 4.7 is observed with Sociable. Two types of motivation appear represented; one dominantly ideational, the other interpersonal. Social Science Motivations is a trait by definition nearly synonymous with this career plan and of the 22 listings under Public Relations, 15 are assigned Social Science Motivations, against a par of 3.8. That motivations of this broader nature are at times compensatory for insufficiencies in an interpersonal direction, has been variously remarked (cf. p. 163).

The motivations of Public Relations, while diverse, appear better defined than those of Teaching. Statistically the most clear-cut association for Teaching is with Creative-Intuitive, an excess of 5 : 1.9, which is consistent with an ideational rather than a human motivation, especially since no trends are demonstrable for Sociable and Human Values. Conformably, Practical Organizing has a deficiency trend of 6 : 11.1 to teaching; but a similar tendency of Unstable Autonomic Functions, 1 : 4.2, is less intelligible.

The Physical Sciences career group invites comparison with its technological congener, Engineering. A negligible association with Basic Personality Highly Integrated for engineering, becomes here a clearly positive 15 : 9.5; the Physical Sciences plan being the first time a career association has appeared for *BPH* (cf. p. 187). In Conformity with previous observations Bland Affect produces a marked excess, 10 : 2.9, as does Inarticulate, 9 : 2.2. With Physical Science Motivations the career plan is largely synonymous, bringing one of the heaviest excesses of the material, 11 : 2.0, with a similar trend for Pragmatic, 10 : 6.2. The pattern is very consistent with what has gone before. The statistical method involved is unfavorable to demonstrating corresponding significance in deficiencies, but it seems pertinent to note that no one with the Physical Sciences career plan was assigned Verbal Facility or Social Science Motivations.

The Undecided group gave significant excesses for Basic Personality Less

Integrated and Sensitive Affect; in this respect resembling Arts, though the relationships are less pronounced. It is, as might be anticipated, the only group to show clear relationships to Lack of Purpose and Values, an excess of 8 : 3.0. The corresponding deficiencies for Lack of Purpose and Values are absorbed about equally among the other career plans.

There is a variously constituted group of 18 career plans, which it did not seem feasible to classify as above. There was observed an excess of 7 : 2.5 for Unstable Autonomic Functions, and a deficiency of 5 : 10.7 for Basic Personality Highly Integrated. There is nothing in the constitution of the group to suggest such associations, and their meanings would have to be studied on a much more individual, "clinical" basis.

Twenty-five of the 257 participants here considered were National Scholars; a group highly selected from regular Scholarship standpoints as well as for geographical origin. The function of these National Scholarships is on the one hand a wider diffusion of the University's contacts, on the other hand to counteract any trend to sectionalism within the institution. The special factors in the selection of this group make it of concern to examine its relation in respect to the present trait series, towards the participant group as a whole. It is remarkably close to the group average. At only one point does a significant difference appear; where if anywhere it would be expected, with Creative-Intuitive, an excess of 4 : 1.6. The next approach to significance is with Bland Affect, an excess of 8 : 4.5. These do not necessarily represent the National Scholar group as a whole, but there is certainly nothing in this result to bear out a suggestion sometimes made, that selectional policies overweight traits of scholarship against those of character. It is still somewhat surprising that in Lack of Purpose and Values they repeat the seemingly high proportion of the group as a whole (cf. p. 165). There is also a slightly unfavorable balance of the *A*, *B*, *C* soundness classes 29 per cent *A*, 25 per cent *C*, as against 37 per cent *A*, 18 per cent *C* for the total group.

The psychiatric classifications also segregated a group of 19 participants in whom appeared traits that might subsequently take them out of a group so highly selected for mental balance as the present. The contemporary "soundness" classifications were 3 *B*'s and 16 *C*'s. Examination of their trait assignments should give light on the traits which contribute to a "soundness" judgment. Actually there is rather little divergence from par. It is naturally considerable in the cases of Basic Personality Highly Integrated and Basic Personality Less Integrated, but the listing of two such cases under *BPHI* seems all but a contradiction in terms, and calls for clinical scrutiny.

At or negligibly differing from par, are *UAF, SVA, DM, JS, SI, CI, CL,* and *IAT.* The positive associations are the heavy (semantic) one with Basic Personality Less Integrated, 14 : 2.8; and the lesser but well-marked ones with Lack of Purpose and Values and Ideational, 12 : 4.2, and 9 : 4.0 respectively. The one significant negative association is the semantic one with *BPH.* There are a number of negative trends that should attain significance with more cases; such as Vital Affect 0 : 3.8; Physical Science Motivations 0 : 2.3; Social Science Motivations 0 : 3.3; Human Values 0 : 3.0. Thus, from the general adjustment standpoint, the ideational complex here leans to the unfavorable; the interpersonal traits Shy, Asocial, Sociable are neutral; while favorable trends are present for larger social interests, in Practical Organizing, Social Science Motivations, Human Values.

Seltzer ('45) has given special attention to the present traits as related to a body-build feature termed Weak Masculine Component (cf. Hooton '45, pp. 82 ff.). From this standpoint, the most striking deviations from the group as a whole are the excesses that Weak Masculine Component shows in the traits of Sensitive-Affect, Inhibited, Creative-Intuitive, and Cultural. The number of times each of these is paired with Weak Masculine Component, with the amount of chance expectation ("par") is given in Table 3

TABLE 3

Trait	Occurrence	Expectation
Sensitive Affect	10	4.6
Inhibited	10	5.2
Creative Intuitive	5	1.7
Cultural	12	5.7

Seltzer finds this further reflected in the fields of academic concentration chosen by these individuals, where the ratio of occurrence to expectation is in the area of Natural Sciences, a 3 : 8.3 deficiency of Weak Masculine Component; in the area of Arts, Letters, and Philosophy, a 16 : 7.9 excess. He observes a deficiency of these individuals in respect to a career plan for Business. The present data show a pairing with Weak Masculine Component in two cases, against a par of 5.9.

IV. RELATION TO MENTAL MEASUREMENT

To the present writer was assigned the task of making various determinations in more quantifiable aspects of mental function.[22] Although the area covered in these has been considered, and is here found, to be largely independent of "personality" functions so-called, the present conditions are in some respects favorable for observing such relationship as may exist. Certain of the traits are by definition concerned with intellectual attitudes, e.g., Creative-Intuitive, Cultural; others much less so, e.g., Unstable Autonomic Functions, Inhibited. Moreover, the concern here is with but one extreme of the range. A brief examination of these relationships may then be offered for the present material. The general procedure is to take up in succession these more quantitative "psychometric" features, describing the relation which certain more relevant members of the trait-series sustain to each.

ALPHA-VERBAL

This is the function most closely corresponding to the common conception of *IQ* (cf. Wells and Savage, '43; also Hooton '45, p. 148). More specifically it is concerned with effectiveness in managing verbal relationships, and is more weighted for alertness than for breadth or depth of intellect. How do participants rated as outstanding in various items of the trait-series compare in respect to this function, with each other and with the group as a whole?

For the *ABC* soundness classes the central tendencies of this measure are at par throughout. The distributions, especially in the *C* class show a bimodal tendency; this may be progressive as one reaches less adequate adjustment levels; controls may be available to check this point. It is as though less adequate adjustment were apt to be associated with relatively high or low *IQ* levels. A trace of this is also present in the alpha-verbal distribution for Basic Personality Less Integrated, but central tendency is at par.

In the case of Sensitive Affect, the alpha-verbal distribution is clearly skewed toward the high end; of the 41 cases involved, 16 are one sigma or more above the general college mean. This tendency is of interest for its occurrence in a multiple choice, fixed answer function of the intellect. The conception of sensitive affect previously outlined would apply rather to creative intellection, but here it seems also to favor the selective (multiple choice). Now it has appeared from other studies with this material, that these creative and selective intellectual functions do not run a parallel course;

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[22] For more detailed discussion of methods, cf. Wells, '45.

the very high selective intellects tending to perform less well in a creative test. Sensitive Affect does not then as such predispose to creative activity, but is similarly favorable to skilled routine functioning. As Kempf ('41) has put the matter from a different angle:

> . . . Its superior sensitiveness for discriminating weak stimuli, hence its sense of importance of minute differences in causes and effect . . . make the lesser variations of this type from the hardy norm exceptionally fitted . . . hence its population proportion is increased in the skilled professions and clerical vocations.

The Vital Affect scores are substantially at par for the general Study group, though it is well to keep in mind that their alpha test scores would themselves run some half a sigma above those of the College as a whole. Bland Affect has a similar central tendency, but the distribution is more regular, and the range is smaller.

Dominance of Mood (*DM*) shows a flattened spread in alpha-verbal, that is to say a tendency for this trait to be shown at the extremes of the alpha-verbal distribution, such as was remarked in connection with the "soundness" classes. Without distinctive features are the alpha-verbal distributions for *HHB, POR, SI, IDL, PSM, SCB, PGC, LPV*. Verbal Facility shows a slight excess in the highest ranges of verbal-alpha, but central tendency is close to par. Inarticulate runs but slightly below par, with an especially regular distribution. Even the small and specialized Creative-Intuitive group covers the same range as the others, though the test scores would run higher by perhaps a quarter sigma. The Creative-Intuitive trait has, as already indicated, no simple relation to formal test functions.

ALPHA-NUMBER

As the name implies, this test series is organized along the lines of the preceding, but deals with quantitative processes. In the soundness classes, the distributions are similar to the verbals; but the *C* class is notably regular, with an excess of cases at the high end, such as is not seen in the verbal function. These cases invite clinical scrutiny, with the suggestion that this feature may occur with greater frequency among those still less soundly integrated. The corresponding Basic Personality Less Integrated group, however, shows only a trace of this tendency.

Like its verbal counterpart, alpha-number gives a flattened distribution for *SVA*, but the skewing to the high end is reduced. Sensitive Affect seems to influence the more subjective, verbal, rather than number operations. The

Vital Affect group is again flattened, with its central tendency a little higher than for the verbal series; a result difficult to understand as yet.

Mood-dominance is again distinguished for the flatness of its alpha-number distribution and excess of cases at the high end. The *POR* scores run slightly higher for alpha-number than for the verbal counterpart; and the flattened distribution, skewed to the high end, appears again with Self-conscious-Introspective. With Creative-Intuitive it tends in the other direction; as here conceived Creative-Intuitive is definitely verbal, not a quantitative function, and number facility is at a discount. An excess of high scores is found with Physical Science Motivations, as one would anticipate. Inarticulate on the other hand, yields a marked excess towards its low end, but this low end is itself relatively high; only two of the 33 cases involved have scores below the general mean for alpha-number. In Verbal Facility on the other hand, 11 individuals score one-half sigma or more below this limit, though the total group ranges to the highest scores, and the difference of the means does not reach statistical "significance." Verbal Facility appears, however, more heavily discounted in alpha-number than is Inarticulateness. Like its verbal congener, alpha-number is represented throughout its range in Lack of Purpose and Values, and shows no departure from group norms.

VERBAL-NUMBER INDEX

It seemed desirable to state the relationship per individual, of the scores in the verbal and number portions of the present alpha test. The index used for this purpose is the verbal score divided by the number score. In the present population, the vebal scores run somewhat higher than the number scores; the average for this index approximates 110. In a specifically technical school, the reverse would probably attain; the material cited in Wells and Savage ('43) suggests a figure in the neighborhood of 93. The higher this figure is, the greater is the verbal tendency as compared with the quantitative.

The question is whether this verbal or quantitative tendency shows any special relationships to members of the present trait-series. The *ABC* "soundness" classes distribute in substantially similar fashion; singularly, there appears less spread of this index in the *C* class. It is thus impossible to look upon extremes in either direction of this function, as a liability in "soundness," for the range here represented. It is still more than possible that "unsound" individuals would show greater tendency to extremes in either direction. Naturally, the material throws no light on this point.

Correspondingly, the Basic Personality categories, *BPH* and *BPL*, show substantially similar figures, sigmas approximately 15. Sensitive Affect sustains the slightly verbal trend of Basic Personality Less Integrated with a mean index of 116, sigma 25, more spread than this function usually shows. The same is true of Mood Dominance, though the spread is somewhat less, sigma 19. For Vital Affect the index is substantially at average, and the spread substantially less, sigma a little under 13. For Selfconscious-Introspective the index and spread are again increased, the situation about as in Mood Dominance. For Creative-Intuitive the index is increased to 126, with sigma of 16; bearing out the verbal conception of the Creative-Intuitive trait. Similarly, Verbal Facility gives the highest (most verbal) ratio observed except Creative-Intuitive, 119; the *CR* of its difference from Inarticulate is 2.49. *Per contra*, Physical Science Motivations yield the lowest ratio here observed, 108, and one of the smallest spreads, sigma 12.[22a] A nearly identical situation is presented for Inarticulate, which bears out the relationships of Inarticulate and Physical Science Motivations elsewhere noted. The figures for Lack of Purpose and Values are at average.

While the trends are consistent, the differences are obviously small, with attainment of statistical significance only for such extremes as between Creative-Intuitive and Physical Science Motivations. The clinical significance of the verbal-quantitative dichotomy is scarcely an open question, and is often conveniently available through such comparisons as *SAT* and *MAT* scores, or the verbal and quantitative portions of the corresponding *ACE* procedures.

Thus, a greater facility of women as compared with men, in dealing with multiple choice material of a verbal type, has long been accepted. Some light on the basis of this difference may be derived from the findings of Seltzer ('45, p. 43), as to the behavior of these tests in his Weak-Masculine Component group, although he cautions that "weak-masculine" must not be considered as equivalent of "strong gynic." This Weak-Masculine does, however, show a comparative facility with the present verbal tests, and a difficulty with corresponding number tests. This is clearest for the following functions, cited for differences between means in Strong and Weak Masculine Components, with critical ratios thereof (based on *PE*) (Table 4).

It may be noted that while this difference in the allied Scholastic Aptitude Test is less clear than for Alpha-Verbal (*CR* 2.28 as against 3.94), the difference for the corresponding Mathematical Attainments Test, in the oppo-

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[22a] The difference in verbal-number index for the means of Physical Science Motivations and Creative-Intuitive yields a critical ratio of 3.58; quite the most "significant" difference among those observed. Critical ratios of present reference are based on standard errors of difference.

TABLE 4

Test function	Differences	Critical ratio
Alpha-Verbal, Total Score	8.00	3.94
Alpha-Verbal, Subtest *D*	1.88	3.92
Alpha-Verbal, Subtest *G*	1.96	4.36
Alpha-Verbal less Alpha-Number Score	13.80	5.50

site direction of course, has a grade of significance similar to that for Alpha-Number (*CR* 2.24 as against 2.12). Here it seems pertinent to note that Alpha-Number consists in large part of computational material, in which women are not at the disadvantage that appears in numerical material of the "reasoning" type.

SCHOLASTIC APTITUDE TEST, *SAT*

(Figures from College Records Office)

This is a refined test of facility in dealing with verbal symbols, probably more involved with achievement than a predominantly speed test of the Alpha type, but less than those of vocabulary range. There is no reason to anticipate a relationship with the "soundness" classes and none is found; in all three classes, the distribution of the *SAT* ratings has a similar range and form.

The outstandingly Ideational (*IDL*) type of individual, however, runs about a half sigma higher than the Study group in general, nearly a sigma higher than the College population as a whole. The Cultural (*CL*) group trends higher still; there is a notable excess of scores 1.5 sigma and more above the general college population. It is especially to be observed that this *SAT* mean score is for the Creative-Intuitive group actually not quite as high as for the Ideational; in consonance with the important educational principle that multiple choice (fixed answer, closed end) tasks do not reach the intellect in its creative functions.

MATHEMATICAL ATTAINMENTS TEST, *MAT*

(Figures from College Records Office)

This is a test corresponding to *SAT*, but dealing with quantitative instead of verbal functions. In relation to soundness classes, it behaves somewhat differently from *SAT*; the *C* class has a flatter distribution, the *B* class is distinguished by an excess of the higher *MAT* scores. The *A* class does not have its share of these higher scores.

The Ideational group rates about half a sigma lower in *MAT* than it does in *SAT*. A verbalized conception of Ideational, and the particular way in which this group was selected, can both contribute to this. On the other hand, the Physical Science Motivations group have in *MAT* the identical mean score that the Ideational group have in *SAT*, again about a sigma higher than the general College population for this test. In the Mathematical Attainment Test, the Physical Science Motivations mean differs from that for Ideational with a *CR* of 2.77.

Vocabulary Range

For the soundness classes, mean and sigma are substantially at par for the *ABC* groupings. But there is some deficiency of the highest vocabulary scores in the *A* class, and the *C* class has a deficiency in the lowest vocabulary grades. Vocabulary range is more environmentally conditioned than is the verbal alertness function of the Alpha test, and a knowledge of words rather than of things or of one's fellow-men is a recognized pattern of "escape."

In the trait-series proper, Vital Affect is at par both as to score and spread. Practical Organizing has a very slight excess, and a similar reduction in spread; the deviations of Selfconscious-Introspective are in the same direction but minimal in amount. Even Creative-Intuitive shows a vocabulary excess of only some 5 per cent, with normal spread; though this 5 per cent equals nearly a sigma, and is among the larger psychometric differences related to these traits. A critical distinction is presented between Verbal Facility and Inarticulate. The means are about half a sigma apart; the higher score indeed attaches to Verbal Facility, but the difference is hardly what the definitions (pp. 154, 155) would suggest (*CR* 2.41).

Condensed Rorschach, Response Number

In this procedure, the regular Rorschach cards are used, but the response time is limited to one minute, and the cards are viewed in the normal orientation only. The general effect of this procedure for a group of this kind is to diminish the response number by about 30 per cent, and to make the average ratio of whole to detail responses about 1 : 1.6.

Vital Affect individuals yield a relatively large number of responses, their mean being about half a sigma above the generality. The apparent meaning of this is modified by the consideration that the Just-So group also ranges about a quarter-sigma in the same direction. The proportion of $F+$ responses among these Just-So individuals should be a critical datum. Nor do the Inhibited group show a reduction that might be expected, but are also somewhat above par. The largest response number might be looked for in the Creative-Intuitive group; they are actually on a par with Vital Affect but with a much greater spread, sigma 13 instead of the 8-9 that attaches to most of these functions. Especially critical in this respect is the comparison of Inarticulate and Verbal Facility. They actually represent the extremes observed, 24 : 32, *CR* 2.52. But it will be clear that response number, while symptomatic, is far from diagnostic for the traits.

Condensed Rorschach, Richness Grade

In the earlier Rorschach literature, a considerable rôle was played by the concept of Koartation, customarily rendered as "constriction"; i.e., a general poverty of response (for further discussion, cf. Klopfer and Kelley '42). No corresponding need seems to have been felt for a category to denote its opposite, although there were allusions to a correlative *Dilatierung*. The reason for this may be that the interest of workers with the method has centered heavily upon qualitative differentiation in response patterns, with reference to differentiation of largely non-intellectual traits. The relation of the present material to the various correlations that have been proposed in this field, is a topic that calls for separate treatment. On the other hand, there soon appeared a need in material such as the present, to reduce these various response patterns to some common denominator of "how much," in a qualitative sense, one seemed to make of the figures, irrespective of balances between Color, Movement, etc. So far, this remains at the level of a simple rating, as essay examinations are rated, on an *ABCD* scale. Mainly, the grade is assigned on the basis of developments in Color, Movement, Originality, and Organization. Naturally there is a good deal of association with response number, but discrepancies are too important for response number to serve as a criterion for the individual case.

Among the soundness classes, there is a slight trend to higher ratings in the *C* class. This is not so much an excess in the upper richness grade, as deficiency in the lower ones. A grade below *D*+ is assigned only once among the 33 participants involved, 23 times among the 157 *A* and *B* participants. Again arises the question how far such a trend to greater richness would hold for decreasing "soundness" beyond the limits of tolerance in the present Study. Scrutiny of such control material as is available may clear up this point. Theoretically, Sensitive Affect should yield an excess in the richer grades; it clearly does not do so, which poses a problem upon which further study is again more profitable than present rationalization.

Vital Affect distributes at par with ratings over the entire range. It is slightly richer than Bland Affect, which has 10 out of 39 ratings of *D* or below, where Vital Affect has 3 out of 37. But the smallness of the difference is more critical than its direction; median ratings vary only as *C* and *C*+. Nor are distinctive features in this respect presented by the trait-groups *HHB*, *PSM*, *SCB*, *VF*, *IDL*, or *PGC*. Only in the case of Creative-Intuitive is there distinct trend towards the higher ratings, especially in the absence of ratings below *C*.

DIFFICULT BLOCK ASSEMBLIES

Of the test functions here considered, the comprehension of space relationships is best represented through the five more difficult of the Harvard Block Assemblies. With reference to various categories of the trait series, this function behaves as follows:

The Sensitive Affect group yields a mean score of 58 seconds, differing negligibly from the general average, with a somewhat smaller spread. The Just-So group is similar as to mean, but its spread, consistently, is but little over half that in the norm group (sigma 16.4). The Ideational group again scores substantially at par, as does the largely overlapping Cultural. The critical situation here is with Physical Science Motivations, where if anywhere, superior performance should be shown. The mean is actually the fastest of those observed, and the spread relatively small (sigma 17), but the margin is negligible. Scores for the Asocial and Sociable *SCB* groups are substantially at par.

Thus the elsewhere indicated relationships of dealing with things as against dealing with ideas or other persons, are not sustained in respect to this related test procedure. It is not impossible that more thorough exploration of the function would conform more to the supposed pattern, but the relationship can hardly be conspicuous. As things stand, the data testify to a relative independence of aptitude and inclination. The inclination, the *attitude* toward the physical or mechanical universe evinces some (negative) relationship towards ideational and social traits; but among corresponding *aptitudes*, less interplay is shown. Extrinsic factors may well be at work here; mechanical pursuits are in average less reputable in the local culture, than ideational ones.

As a criterion of profit from current academic contacts, may be considered the percentage of courses given a "High Approval" rating (cf. Savage, '45). For the participants in three successive year groups, the percentages of these High Approvals are cited by Savage as 36, 32, 29 (Wells '45). When these ratings are considered by Soundness classes, or by trait assignments, the only deviation of present moment is with the small Creative-Intuitive group, who show especially few instances of High Approval. This might be understood on the ground of specialized demands by the intellects represented. In the material here examined, a tendency may be noted, to give High Approval more frequently to teachers than to courses, this difference being particularly marked for the Creative-Intuitive group. The following (Table 5) gives the frequencies of High Approval course ratings which are 40 per cent and above, for participants who are in various trait-classifications. Comparable frequencies for teacher approval are given in the adjacent column.

TABLE 5

	Courses, per cent	Teachers, per cent
Soundness Class *A*	35	52
Soundness Class *B*	28	29
Soundness Class *C*	38	32
Vital Affect	38	41
Bland Affect	28	30
Sensitive Affect	29	39
Ideational	33	56
Cultural	36	49
Creative-Intuitive	8	42
Shy	31	28
Sociable	42	54
Lack of Purpose and Values	35	34

(Thus the High Approval ratings exceeded the critical proportion (40%) of all course ratings, in 35 per cent of those in Soundness Class *A*; in 28 per cent of those in Soundness Class *B*. To Teachers, Class *A* gave comparable approval in 52 per cent of its number; Class *B* gave this approval in 29 per cent of its number.)

The total sample giving rise to the above observations is relatively small. As elsewhere indicated, it includes but partial and variable segments of the ranges in the different functions studied. Under such circumstances observations like these serve indeed to open fields of inquiry, but findings are not to be looked on as representative of larger or different populations. More specifically, substantial correlations, not found here, should be expected between traits like Ideational or Cultural and the conventional intelligence tests, if we could have measures of them to cover their ranges among normal people. The same would be true of Verbal Facility in its given definition, though much less so if it were given a connotation of loquacity. Only an upper crust of these ideational traits is represented among all the present participants, whether they are ideationally designated or not. On the other hand, a wide range of Physical Science Motivations is represented among them, and the block assembly test used hardly picks it up at all. This may be taken to typify the issue between the two types of data; the traits, which rather denote attitudes, and the tests, which are here concerned with capacities, aptitudes, or achievements. Wide differences of opinion, not to say prejudice, exist as to the weights that should be given to these in the assessment of career fitness. The present experience, within and outside of the Study proper, has been marked by a growing estimate of the extent to which attitudinal factors like incentive, fixity of purpose, and direction of interest, are able to compensate for apparent liabilities in the areas to be reached by aptitude measurements. Much remains to be done in the fields of aptitude-achievement, perhaps more in basic abilities of the ideas-things-persons order than in assessments of specific occupational skills. But the greater need appears to be for refinements in the assessment of normal attitudes, somewhat along the lines on which Kuder has contributed a substantial beginning. Other bases, concerned with principles rather more than with techniques, are also taken up in a succeeding chapter.

V. TRAIT INTERRELATIONS

Chapter II discussed the conceptual status of the several trait designations, Unstable Autonomic Functions, etc., mentioning certain relations to other variables of the research, especially the *ABC* "soundness" classifications. (For a discussion of relations to body build, cf. Hooton '45, pp. 93-102.) The present chapter takes up the relationships of each trait, Unstable Autonomic Functions, etc., to its congeners.[28]

For each trait there are accordingly presented (*a*) pairs observed which are clearly in excess of the chance expectation, (*b*) pairs similarly observed which are clearly deficient in relation to the chance expectation; but except as specified, only where the conditions yield a *CR*, derived as described, of 2 or more.

Unstable Autonomic Functions (*UAF*)

Sensitive Affect (*SVA*) shows a 16 : 6.2 excess. The relationship of these processes has long been recognized (and its nature long disputed) but its present expression might well be larger if the criteria could be further refined, especially in the direction of separating out the various autonomic functions for differential instability. As already hinted, there is no reason to look upon the various autonomic functions as equally related to "sensitivity of affect," even in its more usual sense.

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[28] The simple way to express the relationships of pairs such as these, is by the ratio between the observed times a given pair occurs, and the number of pairs most likely to occur by chance. This, however, does not express the likelihood that such a relation would also occur by chance. The criterion mainly used here is a critical ratio determined by "an approximate but conservative estimate of the square root of chi-square"; the normal formula being the difference of observed and expected, divided by the square root of the expected (developed in the Harvard School of Public Health; recommended for these purposes by Dr. C. R. Doering). This formula yields a critical ratio lower than more elaborate procedures. "When this critical ratio is greater than 2, it follows that the Chi-square of the corresponding fourfold table is greater than 4." Occasional effort is made to deal with instances where *CR* by this method is lower than 2, but the presentation generally is concerned with the instances where *CR* is 2 or above. Some calculations were also made by the standard errors of percentages (Garrett, H. E. "Statistics in Psychology and Education," 1941, pp. 226-229). Data in the form here available do not lend themselves relevantly to analysis by groups larger than pairs (e.g. "clusters") whatever the statistical feasibility.

In a sufficient number of cases, critical ratios above the present 2.0 limit will themselves occur by chance, a risk assumed in any statistical inference. In a universe where there is no association, the standard Chi-square procedure is expected to yield, by chance, 5 per cent of critical ratios over 2. In the present universe 29 per cent of the critical ratios are above this limit, their significance being further safeguarded by the aforesaid conservatism of the present procedure as compared with the normal Chi-square formula. One must be prepared however, for occasional "significant" associations which it is impossible to rationalize.

Inhibited (*IHB*) shows again an 18 : 6.8 excess. It will be recalled that *IHB* does not here refer to motor functions, but is defined as more of a conscientious self-restraint. The problem is as elsewhere, the nature of the relationship; some autonomic overactivity would be a natural reaction to conflict situations which the quality of *IHB* would set up. On the other hand, if one's nature is such that a large amount of energy is discharged autonomically, Inhibition as above is a natural manifestation at voluntary and intellectual levels (cf. also under Inhibited with reference to Selfconscious-Introspective, p. 193).

Selfconscious-Introspective (*SI*) shows a 19 : 9.1 excess. This may be considered to have much the same dynamic as the *UAF/IHB* relationship. It can be also, that increased organic sensations accompanying marked autonomic activity, have their own capacity to focus the subject's attention "inward."

Physical Science Motivations (*PSM*) shows a 9 : 4.5 excess. Why a person of *PSM* characteristics should tend to autonomic instability is baffling. It is more conceivable that *UAF* should turn one in the direction of *PSM* through a negative association of its own with social traits.[24] Yet, except as with Shy (excess for *UAF* 13 : 6.6, p. 199), these associations (*UAF/ASC*, *UAF/SCB*) do not appear sufficiently pronounced to meet the present criteria of significance.

Self-Driving (*SDR*) shows a 15 : 5.0 excess. This relationship, with a *CR* unusually high for these data (4.5), is scarcely one that would have been predicted. Yet it is capable of understanding, if one keeps in mind, as one should throughout, the specially selected character of the participants. There is no question that *UAF* is a liability for such a group, and requires to be specially compensated to restore one's capacity to qualify. *SDR* is an attribute eminently fitted to do this. Their association in this way is of concern to the putative emotional tie-ups of autonomic processes. As previously indicated, the *SDR* complex is one figuratively well expressed as "cold strength." What is a person so characterized doing with *UAF?* Probably it is indeed an exceptional association, and relatively few *UAF*'s without it get into this Study group. The important thing is that the two are not mutually exclusive; outstanding *UAF* can and here does exist in the absence of an average development of the affective life.

Vital Affect (*VTA*) shows a 1 : 7.3 deficiency; there is but a single individual in whom the two are combined. This is again of critical concern to the status of the autonomic functions as carriers (to say nothing of initiators, James-Lange) of emotional functions. We appear to be dealing with two types of emotional expression; one implicit, autonomic; the other explicit, summed up as Vital Affect; and either developed at the expense of the other. In the *VTA* person the physiological processes are better integrated for purposive conduct; *UAF* is observed where they are not so integrated.

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[24] Because the unstable individual seeks things, with their more formal and orderly processes, where he is not exposed to the provocation of autonomic disturbances.

Basic Personality Highly Integrated (*BPH*)

It was remarked earlier that the associations between these trait ratings is complicated by the varying standards which apply to them. Probably this is most disturbing in the present instance, with *BPH*. As noted, this trait is assigned to about two-thirds of the present participants, and must be assumed to cover a considerably greater range in its function than is the case with other traits. The median rate of assignment in the categories not concerned with Basic Personality, is 46 (17.3%). It must therefore be assumed, and is so stated psychiatrically (p. 133), that it takes a considerably greater degree of sensitive affect to rate *SVA*, than of basic personality integration to rate *BPH*. Such disparity is much smaller between most of the traits, and less disturbing, but the effect here is largely to break down the significance of relationships positive or negative, that subsist towards the other traits, which are more distinctively "outstanding." Of various traits examined, only three show relationships to *BPH*, within significant limits.

Practical Organizing (*POR*) shows an excess of 74 : 56.5 to which the large number of cases accords significance in *CR*. Of the 95 cases of *POR*, 74 were *BPH*. *POR* is apparently one of the principal criteria for *BPH*.[25]

Asocial (*ASC*) shows a deficiency of 7 : 14.3, the natural converse of what is found for Basic Personality Less Integrated, and a similar situation obtains with Lack of Purpose and Values.

Unstable Autonomic Functions gave a negative trend just outside significant limits; weaker positive trends were indicated for *VTA*, *PGC*, *SCB*, *BDA*, and *JS*.

In both basic personality ratings, and their near congeners the soundness classifications, one may note that the lower extreme, Basic Personality Less Integrated (*C*) is more clearly differentiated than the upper, Basic Personality Highly Integrated (*A*). The *A* soundness class was twice as numerous as the *C* class. The *BPL* category to follow, is clearly separated from *BPH*, with a considerable neutral area between, but there is no differentiation of integration levels for the 153 cases that make up *BPH*. Apparently, though we are moving in that direction, we are not yet so sensitive to outstanding effectiveness of basic personality, as we are to its shadings towards lesser degrees of organization. If we had a selection of the 38 best integrations among the whole 257, as *BPL* represents the 38 judged least integrated, we could anticipate degrees of association possibly more marked than are shown with *BPL*.

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[25] All the value judgments in data like these ("well-integrated," etc.) are subject to the concept of cultural relativity. Such terms do not have similar meanings in all times and places. As Kempf and others have pointed out, less kinetic but more sensitive types may be the better integrated for secure, stable, easy living conditions. Nor need we expect that in a Hindu culture for example, the association of *BPH* and *POR* would be anything like what it is here. *CI* and *CL* might well replace *POR* as a criterion of what that culture regards as sound integration. (Cf. also for the Arab culture, T. E. Lawrence's memorable passage (*Seven Pillars of Wisdom*, p. 42) beginning, "Arabs could be swung on an idea as on a cord. . .")

Basic Personality, Less Integrated (*BPL*)

Associations with this category are the natural opposite of those with Basic Personality Highly Integrated and somewhat stronger, because *BPL* represents a group selected for maximum tolerable deviation from the standards set up, while *BPH* represents relative conformity to them, already mentioned for its negative association with Unstable Autonomic Functions.

Vital Affect (*VTA*) records only one assignment of this pair of traits, against a chance expectation of nearly eight. The impression is confirmed that the basic personality ratings are only less heavily loaded with judgments of the "affective" life, than with the social.

Sensitive Affect (*SVA*) yields an excess of slightly over 14 : 6.5, much smaller discrepancy than with Vital Affect but *CR* is higher, owing partly to a larger number of cases, and partly to what seems to the statistical laymen an artefact of the data, which sends up *CR* when it is the expected cases which are fewer, rather than the observed ones.

Bland Affect (*BDA*) is penalized in significance by this consideration, falling outside limits, though with an over 2 : 6.9 deficiency. It is no matter for surprise if *BDA* turns out the least vulnerable of the affect groups.

Just-So (*JS*) is distinctive in failing to meet its quota here as well as in Basic Personality Highly Integrated, and by an only slightly smaller margin. The cases of *JS* are concentrated in the sixty-odd individuals who ranked between the *BPH* and the *BPL* rating. This argues against a proposed ranging of *JS* as a basic personality category in its own right, representing an overplus of the integrations constituting *BPH*.

Creative-Intuitive (*CI*) has a 7 : 2.5 excess. This accords with the common view of the association of creative faculties with less stable general integrations.

Asocial (*ASC*) has a 10 :3. 6 excess. It renews the question of semantic rather than actual correlation. But it is probable that in these cases there were more positive indications for the *BPL* rating, otherwise the cases would have gone into the middle group, as with Just-So.

Human Values (*HV*) shows a nearly 1 : 5.9 deficiency, barely within significant limits, for the same reason as with *VTA*. These two categories, vital affect and social adjustment, represent the main "carriers of the load" for the higher integrations of basic personality and for the closely allied *A* class of "soundness."

Lack of Purpose and Values (*LPV*) could again raise the questions of semantic correlation. Its 25 : 8.3 excess yields one of the highest *CR*'s in the material. Only 13 individuals, about one-third of the total *BPL*, got into the *BPL* group without it; as there were but 16 individuals who got into the *BPH* group with it. It must be remembered however that *BPL* still represents a fair level of integration, and *LPV* cannot be considered to represent as such a tendency to disorganization, may in some sort even protect against it, in the fashion of Bland Affect. Those who cherish few values, harbor few conflicts.

It remains to be seen how far such characteristics as the above are valid for organismic stability under stresses, as this is what Basic Personality essentially denotes. War conditions have provided special validating circumstances for the present ratings in Basic Personality as well as other traits, and they are separately considered as such (cf. Heath, pp. 101 ff.; Hooton pp. 171 ff.). It is also an open question in what respects an immediate objective test of this basic function is given in the experimental stress procedures as developed by Ligon, Murray, and others, as well as various expressive movements; but the outlook in this direction is promising.

DOMINANCE OF MOOD (*DM*)

Verbal Facility (*VF*) furnishes an excess of significance, 17 : 7.4. Inarticulate balances it with a corresponding deficiency trend of 1 : 5.7. The question is raised as to whether the more articulate individuals do not thus receive a higher rating with respect to this variety of emotional process. Where there are marked changes in the facility of speech, this consideration is especially pertinent. Consistently, there is an excess for Cultural, 17 : 8.6.

Physical Science Motivations (*PSM*) shows a trend to deficiency represented by a ratio of 1 : 5.1. As in the case of Inarticulate, there is but one individual in whom the traits coincide. It is understandable that mood dominance would be unfavorable to the objective thinking implicit in *PSM*.

Certain distastes for this field in persons who show psychometric aptitude for it, may be well accounted for on this basis (cf. Heath, p. 90, case 4).

Dominance of Mood is by definition scarcely compatible with Bland Affect, but one case of coincidence occurs, a deficiency of 1 : 7.4. Such apparent contradiction can be understood only through the specific case.

VITAL AFFECT (*VTA*)

Sociable (*SCB*) yields the most marked positive relationship shown by this trait. The two traits are assigned in nearly the same numbers, and are paired in a little over half the cases. It may surprise some that they are not more associated, as there is no question that Vital Affect makes one in general both more agreeable and effective company.

Human Values (*HV*), a trait closely allied to Sociable, shows an association also well marked, 17 : 8.1. It will be recalled that the trait does not have the implications for comradeship that are carried by Sociable, nevertheless the presence of *VTA* seems to predispose in its direction.

Practical Organizing (*POR*) shows an association less marked, no more than 29 : 19.2 excess, but significant through its larger number of cases. Selectional factors may operate here as with Sociable; *VTA* contributes to one's effectiveness as an organizer of others' activities, and would make one more sought after in this capacity. This is what *POR* essentially denotes.

Social Science Motivations (*SSM*) shows still significant though less marked association, 15 : 8.9. Note that here the actual human contacts implied are reduced. It seems that this association with *VTA* must be indirect, through the medium of "clustering" with Sociable and Human Values.

One of the clearest negative associations is with Lack of Purpose and Values; a 3 : 11.3 deficiency, well within significance. As with Inhibited (see definition and comment, p. 142) it is borne out that *VTA* is concerned with life attitudes as well as with the behavioral patterns in whose terms it has been defined.

Bland Affect (*BDA*) appears incompatible with *VTA* in the material if not by definition; there is no case of their meeting in the same individual. It may be observed that this is not the case with Sensitive Affect; the association is negative, 4 : 8.9, but just short of the statistical criterion; there are four individuals in whom *SVA* and *VTA* are paired.

Inhibited (*IHB*) and *VTA* are also practically incompatible. They seem to meet in one individual, to a chance expectation of 9.9. As may be recalled, *IHB* is here not an overt behavioral function but more of an attitude, and behavior resembling *VTA* can sometimes occur as a superficial compensation, as perhaps once in this material.

Inarticulate (*IAT*) is also incompatible, there is no instance of their coinciding, 0 : 7.3. One may recall the stress laid in definition, on the opposite speech habits of *VTA*.

SHY relates to *VTA* practically as does its near congener Sensitive Affect, above; negative, but not quite within significant limits. Neither statistically, does Asocial, though with a 1 : 4.7 disparity; as *VTA* cannot easily be displayed save in a social setting, even the single coincidence observed is remarkable.

BLAND AFFECT (*BDA*)

Unstable Autonomic Functions (*UAF*) shows nothing like the deficiency that would be involved in a hypothesis of the traditional James-Lange type. Actually there are four pairs against a chance expectation of 6.4. The relation to Basic Personality is in the expected direction, slight excess for Basic Personality Highly Integrated and a 1 : 3.4 deficiency for Basic Personality Less Integrated. As noted, *BDA* is incompatible with Vital Affect and with Sensitive Affect; Dominance of Mood included one participant who is also assigned *BDA*, against a chance expectation of 7.3. It is clear that *BDA* serves to characterize those whose affective-emotional reactions are comparatively undeveloped.

Bridging the interval to the trait-cluster of more intellectual activities, Verbal Facility also does not combine with *BDA*, against a chance expectation of 8.3, and negative trends are observed for the intellectual congeners *SI, IDL, CI*. Cultural has the most marked negative association in this grouping, a 1 : 9.7 deficiency.

The more active social traits also show significant deficiencies. Sociable rates 1 : 9.9, Human Values 1 : 7.2. With the traits of the affective-emotional cluster, the associations of *BDA* may be looked on as largely semantic, but this cannot be claimed for the intellectual and social spheres. *BDA* does not furnish a soil on which the richer ideational and social life develops.

Of the fewer significant positive associations the strongest is with Inarticulate, a 24 : 6.4 excess. The two traits occur in roughly similar numbers and coincide in two-thirds of the *IAT* cases. Inarticulate is, of course, the substantial converse of Verbal Facility.

Asocial (*ASC*) as a similar converse of Sociable, shows an excess of 9 : 4.3. The other trait in this group, Shy, is practically at chance expectation. The meaning of this is obscure, since Shy implies an affective development not readily compatible with *BDA*.

The most interesting of these positive associations is with Physical Science

Motivations, a 14 : 5.7 excess. This complements the above negative associations of dealing with ideas or other persons, by a positive one for dealing with things. How far this is by individual inclinations, or *faute de mieux,* calls for clinical scrutiny. But reference may be had to a situation previously mentioned for Dominance of Mood. One can get along with a minimum of objective thinking in dealing with ideas (unquantitated). Dealing with one's fellows requires somewhat more, but dealing with the physical universe requires the most. It accordingly represents the universe where *BDA* is at its greatest relative advantage.

SENSITIVE AFFECT (*SVA*)

Already noted have been the significant associations, positive with Unstable Autonomic Functions and Basic Personality Less Integrated, negative with Bland Affect. There is an excess of 12 : 6.2, for Self-Driving, probably to be understood as in the case of *UAF; SDR* helps to offset the liability of the other trait. For the rest they are most prominent in the intellectual sub-series. The excesses are in the following ratios: Selfconscious-Introspective 24 : 11.1; Ideational 17 : 9.2; Creative-Intuitive 11 : 2.7; Cultural 25 : 9.2; Verbal Facility 19 : 7.9, no *CR* under 2.5. The obverse of Verbal Facility, that is Inarticulate, tends to deficiency, 2 : 6.2. Of the 16 cases assigned Creative-Intuitive, 11 are also assigned *SVA*. That is to say, the sensitivity to associative bonds in the thought sphere which is the basis of the creative-intuitive, has gone along with an oversensitivity in affective response; though as is quite understandable, affective sensibility does not in any such way involve the intellectual correlate. Relations to projective functions (e.g., Rorschach) as well as more quantifiable mental processes will be of interest for these cases. There is a further 14 : 7.5 excess for Social Science Motivations, which can be similarly understood on a common "cerebrotonic" basis (cf. p. 212). It "makes sense" more readily than the association of *SSM* and Vital Affect.

Other trends that may be noted are towards negative association with Practical Organizing (11 : 16.2) and Pragmatic (9 : 16.9); also to Human Values (3 : 6.9). With Asocial and Sociable the associations are nearly at par. It is thus observed that Vital Affect disposes towards dealing with other persons, Bland Affect towards dealing with things, and Sensitive Affect towards dealing with ideas.

JUST-SO (*JS*)

This is a category distinguished for its independence of the others in the series. Its only significant association is positive with Inhibited, approximately 13 : 6.7. Of the 35 *JS* assignments and 49 *IHB* assignments, the traits thus meet in 13 cases. The special meaning of *IHB* may be recalled. One can understand that *IHB* would frequently limit behavior in a Just-So fashion, but not so well that Just-So traits should associate themselves specifically with the "moral" scrupulosities here subsumed under *IHB*. Of the 35 individuals rated Just-So, 28 are rated Basic Personality Highly Integrated, against a par of 20.8; two are rated Basic Personality Less Integrated, par 5.2. The remaining five were placed among the "indistinctively integrated" group (p. 139), par 9.0.

SELF-DRIVING (*SDR*)

This trait was previously distinguished for its associations with Unstable Autonomic Functions and Sensitive Affect. A similar relationship with Inhibited is indicated in a 16 : 6.9 excess. One could understand this in two ways. An excess of *SDR* is needed to maintain the inhibitions, and as with *UAF*, it is required to boost individuals with such limiting traits into a "normal" group. This may indeed be its principal rôle in the material, for its other positive associations, somewhat less marked, are with Ideational, Selfconscious-Introspective, and Shy. No semantic factor can be involved here, and the associations should be understood as pertaining not to people in general, but to a group selected as is this one. Again there is no coincidence with Creative-Intuitive, but the chance expectation is only 2.2.

INHIBITED (*IHB*)

Comment is already made on this trait's significant positive associations with *UAF*, *JS*, and *SDR*, and its negative one with *VTA*. The excess of nearly 23 : 12.4 with Selfconscious-Introspective is not surprising, but the dynamic is questionable. Abstracting Hamlet's remark about conscience and cowards from its value-connotations, the purport is that where a personality is capable of adjusting itself in the comparatively facile *SI* direction, it readily develops inhibitions about dealing with the environment in a more objective way. At the same time, nothing is more comprehensible than for an individual already inhibited in external contacts, to develop satisfactions of the autistic level represented by *SI*. Clinical study may clear up genetic relationships for individual participants, and this is one of the cases where partial correlations may be of marked subsequent service.

SHY has a somewhat stronger association with *IHB*, an excess of 24 : 6.6. *IHB* denotes mental attitude rather than conduct pattern, and by their definitions, *SHY* is practically a resultant of Inhibited plus Sociable. A manner in which this could arise was discussed under a previous heading of Asocial (p. 160), that is, underlying Sociable traits modified by inhibiting nurtural factors. Sociable itself shows a 3 : 10.5 deficiency towards *IHB,* but it is worth noting that there are three cases where the two are combined, *SCB* motivations being, comparatively, strong enough to break out of the *SHY* level.

PRACTICAL-ORGANIZING (*POR*)

This trait showed significant positive associations with Basic Personality Highly Integrated. In the subsequent material it is distinguished by negative associations in the ideational complex of traits, the deficiencies being for Selfconscious-Introspective 12 : 24.0; for Ideational 7 : 20.0; for Creative-Intuitive 0 : 5.9; for Cultural 7 : 20.0. One might look for negative associations with Inarticulate and Inhibited but these are actually close to par, as is the case with Asocial. A 3 : 11.8 deficiency is observed for Physical Science Motivations, further emphasizing the special position that *PSM* seems to occupy in relation to the social traits. *POR* here represents an "executive" dealing with other persons, as contrasted with ideas or with things; and the trait appears to be opposed as well as contrasted.

Practical-Organizing and Pragmatic were paired in 64 of the 90-odd cases in which each occurred. This number would probably be increased by a more precise evaluation of these traits, for by definition, Practical-Organizing is in large part a conduct phase of the mental attitude denoted by pragmatic. The two are not, however, the synonyms that they could be taken for unless this distinction were made explicit. Sociable and Shy, like Asocial above, also do not show associations that might be looked for, but are close to par.

SELFCONSCIOUS-INTROSPECTIVE (*SI*)

Significant positive associations have been demonstrated with *UAF, SVA, SDR,* and *IHB;* its only negative one so far is that with *POR* just mentioned. In the remainder of the ideational sphere it shows affinity for Ideational, 24 : 13.6; for Cultural 23 : 13.6; and for Verbal Facility 21 : 11.7. The Cultural trait is a natural reaction to Selfconscious-Introspective; cultural interest furnishes a content on which *SI* would feed. A corresponding negative trend for Inarticulate, 4 : 9.1 may be cited. The question may be raised if the *SI*'s who are talkative impress an interviewer with their *SI* trait, where the inarticulate fail to do so. It is not likely that the psychiatric experience involved would seriously miss this point; some occurrence of this complication would be represented in the four pairings of Inarticulate and Selfconscious-Introspective that do occur.

Shyness is somewhat implicit in the *SI* definition, and it is not surprising to find a 23 : 11.9 excess for Shy. Either could be reactive to the other; *SI* as a defensive adaptation to underlying shyness, or underlying *SI* making one dependent on these ideational resources, with consequent failure to develop social aptitudes. There are personalities in which there is a better outcome, for the association of *SI* with Sociable is at par (presumably influence of Basic Personality Highly Integrated). But *SI* does not appear a generally successful technique of personality adjustment. It has a 22 : 14.2 excess for Lack of Purpose and Values, which the fair number of cases involved brings within significant limits. As might be expected there is a negative association for Pragmatic, 13 : 25.0.

IDEATIONAL (*IDL*)

Significant positive associations of this trait have already appeared for *SVA* and *SDR* and *SI*; negative for *POR*. Explanation is needed for the lack of significant relationship with Creative-Intuitive, though there is a 6 : 3.4 excess; for considering the definitions, one could hardly be creative-intuitive without being ideational. Apparently this common area of meaning tends to be covered by Cultural rather than Ideational. *IDL* has a 28 : 11.3 excess for *CL*. By definition it is a sort of watered-down phase of Cultural, with less favorable connotations (p. 151). It furnishes a basis for Verbal Facility, with which it has a positive association of 19 : 9.7. Pragmatic has a definition nearly the opposite of *IDL*, but the two are paired in six cases, a deficiency of no more than 6 : 20.8. Worth noting in this connection is a corresponding negative trend towards Human Values, with deficiency of 3 : 8.4 (cf. remark on Practical Organizing and Physical Science Motivations, p. 194).

CREATIVE-INTUITIVE (*CI*)

CI has so far demonstrated significant positive association with Basic Personality Less Integrated, and negative with Practical Organizing only. This may be attributed to its small numbers, for it is as distinctive as any trait of the series. It is substantially included within Cultural; of its 16 cases, 15 are also assigned *CL*. Ten have the Verbal Facility rating, denoting a 10 : 2.9 excess. Bearing in mind that *VF* alludes to oral facility, the question is raised if this association is not heavily weighted by the interview conditions, which are especially favorable to facile and free expression. Oral *VF* as a general social trait certainly need not be, and probably is not associated in such measure with Creative-Intuitive. Pragmatic, a substantial opposite semantically, has a 1 : 6.2 deficiency; this seems close to the attenuated extreme of association which is obtainable under the rather coarse rating procedure involved. The small numbers make it no more than suggestive, but one would scarcely suppose that more than half the chance expectation would be also assigned "Lack of Purpose and Values" (2 : 3.5).

CULTURAL (*CL*)

The significant positive associations previously discussed, are with the traits *DM, SVA, SI, IDL,* and *CI;* the negative ones with *BDA* and *POR*. Among the remainder, there is a 28 : 9.7 excess for Verbal Facility; the positive associations of this order thus include the actively ideational traits, as well as Sensitive Affect and Dominance of Mood. There are distinct negative trends for Physical Science Motivations and Inarticulate, 3 : 6.7 and 3 : 7.6 respectively, but the extreme of these negative associations is with a close congener of Practical Organizing, that is Pragmatic; a 6 : 20.8 deficiency. There is confirmed the affinity of the general ideational cluster with Sensitive Affect, and its opposition to the Practical Organizing-Pragmatic group. Toward the social series the present trait, like the ideational complex generally, is relatively neutral.

PHYSICAL SCIENCE MOTIVATIONS (*PSM*)

Bland Affect and Unstable Autonomic Functions have thus far demonstrated a significant positive association with this trait; there is corresponding negative association with Practical Organizing. The special orientation of a liberal arts college group brings about a relative underemphasis on this trait complex, in favor of the more strictly ideational. An opposition between the two that has already been indicated, comes out more clearly in respect to Inarticulate, where this trait shows a 12 : 4.5 excess, corresponding to a 0 : 5.7 deficiency for Verbal Facility (cf. Hooton '45, p. 151). It is this relatively vocal phase of the ideational which carries most of *PSM*'s opposition. Its relation to the social complex was somewhat discussed in a previous chapter (p. 151). There is marked deficiency for Sociable (1 : 6.8), whose strength is perhaps more surprising than its direction. Corresponding excess does not turn up for Asocial, where it might be expected, but for Shy. The situation with Shy would favor interpreting the interest in "things" as reactive; these would be individuals in whom good natural tendencies toward socializing have been somehow modified nurturally, and have turned in the direction of dealing with the concrete rather than the ideational. Such a hypothesis awaits clinical scrutiny. There are, consistently, trends to excess for Pragmatic and deficiency for Human Values; 17 : 12.3; 1 : 4.9 respectively.[20]

INARTICULATE (*IAT*)

The significant excesses previously recorded are for Bland Affect and Physical Science Motivations; with an incompatibility towards Vital Affect.

This trait is the substantial opposite of Verbal Facility, the deficiency being 0 : 6.4. Corresponding deficiencies for the social sphere are observed; that for Sociable as 2 : 7.7, and a similar trend with Human Values as 1 : 5.6. There is a well attested excess for Pragmatic, in the ratio of 23 : 13.9. While he may have less occasion to be vocal, there is no reason why a pragmatic person should be outstandingly inarticulate, and actually only about a quarter of these Pragmatic cases are so, to the extent here considered. It is rather that the inarticulate person does not get beyond discoursing at relatively pragmatic levels.

VERBAL FACILITY (*VF*)

From this point on, it will be evident that the bulk of significant relationships have already been cited. Positive associations for *VF* have included *DM, SVA, SI, IDL, CI, CL;* that is, the ideational series generally, plus certain affective components. Previous negative associations are traits converse to the above, *BDA* and *IAT,* plus the concretely oriented *PSM.*

Surprising is the lack of association with Asocial, 4 : 4.3. One may recall that an asocial individual can well be motivated to more social reactions in and for this particular interview situation. The only other relationships to be cited are the not unforeseeable ones of excess for Sociable 17 : 9.9, and deficiency for Pragmatic 8 : 17.7. The latter complements the above negative association with Inarticulate. Verbal Facility and Pragmatic represent two basically different adjustment modes, and the user of one has little need of the other. On the other hand the affinity of Verbal Facility for Social Science Motivations, excess 15 : 7.9, follows reasonably on that for Sociable, as does that for Human Values, 13 : 7.2.

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[20] Pertinent to these findings is an observation of Truman L. Kelley's. It appears that physical scientists, as compared with other intelligentsia groups, experienced rather less difficulty in adjusting to recent extremes of fascist polity. Those most resistant were found rather among ideologists and social scientists; such as would be characterized in the present terms by Ideational, Cultural, Creative-Intuitive, Social Science Motivations, Human Values.

Shy

This trait has demonstrated special positive relationship with *UAF, SDR, IHB, SI,* and *PSM;* corresponding negative ones have not appeared, and the only one for the trait series meeting the criteria of significance is with its partial opposite of Sociable. The deficiency is 1 : 10.1.

Asocial (*ASC*)

The positive associations demonstrated for this trait, have been of significant level with Basic Personality Less Integrated and Bland Affect. Corresponding negative association occurs with Basic Personality Highly Integrated. *ASC* is thus distinctive as a factor in this basic classification. Its further associations are largely semantic, negative to Sociable, 0 : 5.1, with a similar trend for Human Values, 0 : 3.7. Food for thought may be found in the excess that occurs with Lack of Purpose and Values, 13 : 5.2; actually just over half the *ASC*'s are assigned *LPV*. Dependence of enduring purposes and values upon human associations is somewhat more than a platitude.

Sociable (*SCB*)

Vital Affect and Verbal Facility carry the positive associations previously cited for this trait; the negative ones are with *BDA, IHB, PSM, IAT, SHY* and *ASC.* Of the remainder, that with Human Values is the only one recorded as of present significance. Of those rated Human Values, over half, 22, are also assigned Sociable. Conversely to Asocial above, the association with Lack of Purpose and Values is a negative trend of similar proportions, 7 pairs to a par at 12.0.

Pragmatic (*PGC*)

Positive associations have been recorded for this trait with *POR* and *IAT;* negative with *SI, IDL, CL, CI* and *VF;* that is to say, with the general complex of ideational activity. It demonstrates no associations of the required level with the traits remaining for consideration.

Social Science Motivations (*SSM*)

Although of fairly frequent assignment, significant positive associations for this trait have been recorded only for Sensitive Affect, Vital Affect, and Verbal Facility, with none sufficiently negative. Only Just-So and possibly Practical Organizing evince a similar independence; for Basic Personality Highly Integrated is hardly assigned on a sufficiently "outstanding" base to be comparable. But as indicated in previous discussion, *SSM* is a relatively "surface" trait, and the independence is principally statistical; the motivations arise in too many different ways to establish special relationships with any of the more fundamental characteristics.

HUMAN VALUES (*HV*)

Positive associations have been sufficiently attested for *VTA*, *VF*, and *SCB;* negative for *BPL* and *BDA*. This is probably another of the traits that would have shown sufficient association with Basic Personality Highly Integrated, if the assignment of the latter were more selective.

LACK OF PURPOSE AND VALUES (*LPV*)

Excesses have been previously noted for *BPL*, *SI*, and *ASC*, deficiencies for *BPH* and *VTA;* forming a pattern entirely consistent, if limited in extent.

The trait-pairs which have been considered were initially selected as showing on statistical inspection, likelihood that their critical ratios would be above the limit specified for significance. But some cases not so included appear worth examining for their intrinsic meanings; as to whether or not any relationship is indicated for this material. Of all remaining pairs so examined, only one showed a critical ratio of 2 or more. This was the pair mentioned on p. 186, *UAF/SHY*, with the 13 : 6.6 excess. A tie-up of Unstable Autonomic Functions with non-autonomic features elsewhere hinted at (p. 137) complicates the problem of which is reactive to the other. Especially in the shy person, would social contacts bring Unstable Autonomic Functions into play. Or one who reacts to social contacts with the disagreeable concomitants of Unstable Autonomic Functions would receive a negative conditioning to such contacts, having the behavioral features of shyness.

One might expect that Sensitive Affect would be a considerable barrier to Practical-Organizing, but this is not especially the case. The deficiency is only 11 : 16.2. Practical-Organizing might here refer to ideas as well as persons or things, and this aspect would not be so affected.

In a strict conception of Asocial, the trait should have a clear negative association with Sensitive Affect, but there is substantially no association. One would hardly expect Sensitive Affect to have a positive association with *LPV*, here it is 13 : 9.6. One suspects that clinical scrutiny would show clear associations in individuals, in both directions, cancelling each other out.

The nature of Bland Affect should manifest negative associations with Selfconscious-Introspective and Shy. It does with *SI*, in the ratio of nearly

6 : 11.6, but *SHY* is substantially at par. On its face this is all but a contradiction in terms, and cannot be elucidated save clinically.

In a group of this sort, one might expect the Inhibited category to seek balancing factors in the ideational, but there appears no disposition to do this; the *IHB/IDL* association is practically at par. On the other hand, and perhaps more naturally, there are traces of such association with Social Science Motivations; a 13 : 8.4 excess.

Practical-Organizing and Asocial should yield strong negative association, whereas they are very close to par; further indication that the "organizing" involved may be other than social. Clinical study and some refinement of the Practical Organizing category is indicated; it matters more than is provided for, what is being organized.

Selfconscious-Introspective and Sociable are not the bar to each other that might be supposed; the two behave as independent variables.

As in the case of Inhibited, one could look for the *SHY* category to balance its frustrations in the manner represented by Ideational, but it is not the case oftener than the two traits would coincide by chance expectation.

The small Creative-Intuitive category is also independent of the Sociable trait; as already noted, it ought hardly to show any lack of Purpose and Values and there are actually two such pairs, to a chance expectation of 3.5.

The supposed social significance of mechanical inclinations leads one to examine *ASC/PSM;* their paired occurrence is exactly that of chance expectation. It is more peculiar, and really invites some clinical attention, that Asocial and Verbal Facility are also paired practically according to chance expectation. Verbal Facility is assigned on an oral basis, it is to be recalled. Such a situation would be understandable enough with Shy, but not with Asocial.

Altogether this short series discloses a number of relationships, or lack of them, that it is not easy to square with general experience plus the defined meanings of the traits; it is still possible that these can be cleared up by special studies of the case-histories.

By way of summary, the following (Table 6) gives for each trait, all other traits which are associated with it positively or negatively within the present limits of significance (*CR* as above, 2.0 or more). Thus with *UAF,* there clustered the traits *BPL, SVA, SDR, IHB, SI, PSM, SHY.* Only *VTA* showed a negative association of this level.

The negative social clusterings of Physical Science Motivations are brought into relief, as well as a general relationship of the affective sensibilities to ideational traits. Note the two-fold relationships of Pragmatic; on the one

(TABLE 6)

Trait name	Positive associations	Negative associations
Unstable Autonomic Functions	BPL, SVA, SDR, IHB, SI, PSM, SHY	VTA
Basic Personality, Highly Integrated	POR	ASC, LPV
Basic Personality, Less Integrated	UAF, SVA, CI, ASC, LPV	VTA, HV
Dominance of Mood	CL, VF	BDA
Vital Affect	POR, SCB, SSM, HV	UAF, BPL, BDA, IHB, IAT, LPV
Bland Affect	PSM, IAT, ASC	SVA, VTA, DM, CL, VF, SCB, HV
Sensitive Affect	UAF, BPL, SDR, SI, IDL, CI, CL, VF, SSM	BDA
Just So	IHB	
Self-Driving	UAF, SVA, IHB, SI, IDL, SHY	
Inhibited	UAF, JS, SDR, SI, SHY	VTA, SCB
Practical Organizing	BPH, VTA, PGC	SI, IDL, CI, CL, PSM
Self-conscious-Introspective	UAF, SVA, SDR, IHB, IDL, CL, VF, SHY, LPV	POR, PGC
Ideational	SVA, SDR, SI, CL, VF	POR, PGC
Creative-Intuitive	BPL, SVA, CL, VF, SVA,	POR, PGC
Cultural	DM, SI, IDL, CI, VF	BDA, POR, PGC
Physical Science Motivations	UAF, BDA, IAT, SHY	POR, VF, SCB
Inarticulate	BDA, PSM, PGC	VTA, VF, SCB
Verbal Facility	SVA, DM, SI, IDL, CI, CL, SCB, SSM, HV	BDA, PSM, IAT, PGC
Shy	UAF, SDR, IHB, SI, PSM	SCB
Asocial	BPL, BDA, LPV	BPH, SCB
Sociable	VTA, VF, HV	BDA, IHB, PSM, IAT, SHY, ASC
Pragmatic	POR, IAT	SI, IDL, CI, CL, VF
Social Science Motivations	SVA, VTA, VF	
Human Values	VTA, VF, SCB	BPL, BDA
Lack of Purpose and Values	BPL, SI, ASC	BPH, VTA

hand with the executive-social trait of Practical Organizing, on the other with the opposed Inarticulate; both here find their negatives in the ideational cluster. A field-day for partial correlations is suggested, but as has been noted, the data are not sufficiently quantitated. Furthermore, unless "personality" trait names are given more objective meanings than is commonly the case, such procedure easily strikes over into a study in semantics. In such cases it is not the essential behavior of those studied that is *being correlated*, so much as the verbal behavior of whoever assign the traits.

VI. PLACE IN SYSTEMATIC PERSONALITY EVALUATIONS

The examination of those traits in the individual which the literature commonly includes under "personality" was one of a number of divisions in this research undertaking, though it naturally occupied a pivotal position. In the organization of the research, it was committed to the psychiatrist. The purpose of this chapter is to study the ways of meeting such a requirement, that come within the orbit of the essential technique of psychiatry; that is, the interview. A basic feature of this requirement is, however, foreign to the ordinary uses of psychiatry; that is, the data must be in systematic and to some extent quantifiable form. Unless this is so, they cannot be suitably integrated with the findings of other disciplines or compared with other groups. Up to the present, the principal developments of this nature have been made either by psychologists, or by psychiatrists with major psychological interests and contacts.[27]

Initial attempts at systematic descriptions are very naturally in terms of outstanding features. The work of John Earle (*Microcosmography,* 1628) was a case in point, as were the *Characters* of Theophrastus; a trait is posited (e.g., "A high-spirited man"), and a personality is described in whom that trait is outstanding; sometimes so specifically as to indicate that the figure is an actual acquaintance. The present trait-series corresponds in principle to one organized by Cattell (J. McK.) at about the beginning of this century. This formed the basis of perhaps the earliest attempt at statistical treatment of such data, (Norsworthy, '08). In 1925, Floyd Allport published the first detailed schematization of personality traits in form for extensive use. Since that time the number of such schemata has greatly increased. Chassell's "Experience Variables" ('38) are among the most elaborate; widely accepted today are those of Bernreuter, Kuder, and Hathaway and McKinley (Minnesota Multiphasic). For further account cf. Maller in Hunt ('44, pp. 170-213).

Paralleling these developments were the schedules developed for psychiatric history taking. In that direction G. S. Amsden ('23), August Hoch ('13), and Adolf Meyer were pioneers in this country, and their influence pervades this aspect of contemporary psychiatric teaching (cf. Whitehorn '44). Such an approach differs in two essentials from the above psychological: (*a*) The emphasis is different, leaning towards the pathological; (*b*) it makes few or no demands on quantitation and in consequence repeatability. In theoretical basis, and in content, the psychiatric approach is the stronger; in method, the advantage is clearly with the psychological procedures.[28]

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[27] A recent review of the general topic, very comprehensive, though somewhat differently oriented, is contributed by many authorities under the editorship of Hunt ('44). It is variously cited in the present text; the bibliographies are notably extensive. For review and critique of earlier psychological work, reference should be had to Symonds ('31). This deals with an exploratory period, characterized by experimentation with wide varieties of devices, with something of the overemphasis on "method" said to be characteristic of the local culture. Projective procedures were practically unrecognized at that time; and their influence has had no small share in the increased perspective and insights that have subsequently been achieved. The enduring values of the earlier work are derived chiefly from the breadth of its search for "objective" procedures.

In an undertaking like the present, the goal would be to achieve the intercomparability of the psychological approach, while preserving the more searching features of the psychiatric. Up to this writing the most successful attempt to do this is represented in the study by Hamilton ('29), on marriage adjustments. If similar procedure could be followed with material like the present, its meanings would increase.[29]

Hamilton's work began with the organization of a properly comprehensive and directed series of interview questions. To maximize equality in presentation these were not given orally but in written form. The one interviewed then responded orally, and wholly in his own words, with no limit on extent or freedom of response. The interviewer took sufficient notes. Aside from differences demanded by the topics, the order of information was similar to the present, certainly not less intimate; the time consumed per individual was somewhat less, and the content far more accessible. Hamilton was thus a prophet and a master of the "structured interview."

When one deals, as did Hamilton and the present research, with comparatively intelligent and not unsophisticated persons, the above is a most advantageous procedure for data-gathering. Technological advances have made complete recording feasible (cf. Rogers '42); circumstances must decide if the added complications justify themselves.[30] But the technique of gathering data must not be detached from that of processing and presenting them. In the research here dealt with, the data were gathered in substantially free interview. The current yield is, as already amply clear, the presence of certain traits as "outstanding" (not if their absence is outstanding). More gradation than this is often desirable, as well as the clearest definition practicable of what the gradations denote. The items do not need uniformity among themselves as to the amount or nature of this gradation; Hamilton's data made varied demands in this respect, and his treatment illustrates ways of handling, adequate to all but very special purposes. A reworking and extension of the present trait-series (Heath '45) uses four steps throughout, but as yet there is very little material based on it.

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[28] But in evaluating a schema of personality description or analysis, it is wise to ask oneself "How has this system been applied to the understanding of human beings in face to face relationships? Could it have been set up without personal knowledge of any of the individuals on whom it rests?"

[29] At the inception of this research a rising (and since very distinguished) psychiatrist was sounded out with a view to doing this work. He demurred on the ground that he "didn't see how one could talk with them." It would be invidious to look on this as other than a rationalization; but it is noteworthy that this rationalization should have been offered as pertinent.

[30] Also one should consider the part that can be played by written response, with its marked economies of time. The "autobiography" would be of limited service, but much of Hamilton's method could doubtless be reduced to writing; cf. written response in Rorschach and other projective methods.

An advantageous feature of the trait system put forward by Murray ('38) is the series of "questionnaire" items that accompanies the discussion of each trait. Actually these items are given in the form of statements ("Expressionaire"), as seems now to be increasingly preferred to the direct question, as in, e.g., Bernreuter. The effect of such items is to clarify the trait concept in the user's mind in a way that definition can never do. For this reason, as well as from a comparative standpoint as such, it has seemed desirable to review certain sources of such items in their relation to the present trait series. As concerns Murray, common areas may be looked for in the series given in Table 7.

Early trait-classifications were of general reference, to humanity at large,

TABLE 7

Murray's trait-name	Present trait-designation
Affiliation	Sociable
Anxiety	Unstable Autonomic Functions
Autonomy	Asocial
Cognizance	Cultural
Conjunctivity	Practical Organizing
Construction	Practical Organizing; Physical Science Motivations
Disjunctivity	Practical Organizing
Ego Ideal	Selfconscious Introspective
Emotionality	Dominance of Mood
Endocathection	Cultural
Exocathection	Pragmatic
Exposition	Ideational, Verbal Facility
Extraception	Pragmatic
Infavoidance	Shy
Intraception	Selfconscious Introspective
Inviolacy	Asocial
Order	Just-So
Seclusion	*Asocial*
Understanding	Cultural

or at least as much of it as the author could envisage. Those now current are uniformly and explicitly directed to more special purposes. Among these later authors, Strong addressed himself to the matter of vocational choice; Bernreuter to particular adjustment types; Hathaway and McKinley (Minnesota Multiphasic) chiefly to pathological symptoms; Kuder again in a vocational direction, though on more fundamental theory than is embodied in the Strong series. Kuder's work represents as far an advance in these directions as is available as yet; both for conceptual validity, and "practical organization."

Partly with a view to clarifying the meanings of the present categories, as well as indicating means to assess them, review is offered of the schedules of *Bernreuter*, of *Kuder*, the *Minnesota Multiphasic*, the Guilford Martin *Personnel Inventory I*, The *Watson-Fisher* Inventory of Affective Tolerance, and the Guilford-Martin Inventory of Factors *GAMIN* with classification of items according as they refer especially to the various traits of the present series. Latitude in classifications like these must always be conceded for individual items, but the differential emphases appear valid and of interest as source material for study of the present traits.

A typical item in "personality inventories" concerns the presence or obsence of a quasi-neurotic symptom, and a comprehensive catalogue of these may be compiled from them. In comparison with present trait-series there is, accordingly, relative emphasis on autonomic function, on the affective-emotional life, and on interpersonal relationships. The intellectual life is comparatively untouched, as are the broader attitudes concerned in the last four items of the present series. The Kuder series distributes its emphasis somewhat evenly, chiefly upon the trichotomy of dealings with persons, things, and ideas.

More in detail; for specific inquiries as to autonomic function, Unstable Autonomic Functions in the present series, one should look to the *GAMIN* or the Minnesota inventories. The Inventory of Affective Tolerance also embodies a few items; the Kuder and the Guilford-Martin Personnel Inventory put their concerns substantially elsewhere.

The Basic Personality ratings (Basic Personality Highly Integrated, Basic Personality Less Integrated), are functions rather of a complete inventory score than of specific items. But typical emphasis is so heavily on the less adjustive traits it is hardly suited to distinctions in the degrees of personality integration among the present participants (as denoted for example in the *A*, *B*, *C* classes of Ch. II). Neither does the Kuder aim directly at such distinctions, though it may give leads on them in the balance of the scores that make up its profile ratings.

The affective emotional sub-series (Sensitive Affect, Vital Affect, Bland Affect, Dominance of Mood) is well represented in all these schedules except the Kuder, most heavily in the Minnesota and *GAMIN*. From a precisionist standpoint, one may wish to recall that Sensitive Affect in the present series is a narrower concept than would elsewhere be understood by the term sensitive, as applied to the affective-emotional sphere. Such a sensitivity would be represented in the present conceptions as the opposite of Bland Affect, *BDA*. In this sense, the range of *BDA* has a very large representation among the schedules now under scrutiny. Kuder passes over this aspect, as over liabilities generally, but it has a good sampling of Vital Affect items, as do Bernreuter, Minnesota, and *GAMIN*. Minnesota is the best source for items bearing on Dominance of Mood; these are more sparingly found in Bernreuter, and Inventory of Affective Tolerance (Watson-Fisher).

Among the intellectual functions, Selfconscious-Introspective has no conspicuous representation anywhere, though a few items may be picked up in Minnesota and *GAMIN*. Apparently it is too well intellectualized a trait for relevance to an inventory intended to be generally serviceable. But note its representation in Murray, whose material comparatively resembled the present. As uniformly in that sphere, Kuder is the best source of Ideational items, though they occur also in Bernreuter and Minnesota. As might be expected, Kuder is practically the sole source for Creative-Intuitive, and Cultural has but a sparing representation elsewhere, as in Minnesota and *GAMIN* (but considerable in Murray). Previous mention was made that the present liberal arts setting led to playing down the rôle of the Physical Science Motivations complex. In Kuder, its items nearly equal the combined total assigned to Cultural(Inarticulate, and Verbal Facility; Inarticulate is little found anywhere, least in Kuder.

With regard to the interpersonal sub-series, Shy and Asocial get slight mention from Kuder, and liberal attention from the other sources considered. Bernreuter, Kuder, and Minnesota are better sources for Sociable than the other "inventories." As already noted the life-attitude traits, like those of Basic Personality, represent concepts with which the schedules having the "personality inventory" orientation cannot well concern themselves directly. In the Kuder they are largely represented, especially Human Values. Only in Bernreuter and Minnesota was found a sparing occurrence of items directly referable to "Lack of Purpose and Values."

So much for illustrations of data-gathering in this field. The further consideration is what one wants the data to do; such objectives as already indicated for Strong, Kuder and others. In Murray's work the trait system is oriented to psychodynamics; with Sheldon and Stevens it is especially concerned with relationships to body-build; with Lewin it was largely the rendering of certain psychopathological concepts into a form academically assimilable, and susceptible to experimental refinement. In the present instance the proximate function is to study relationships with data from associated disciplines in the immediate research; e.g., physical anthropology, physiology, measurement of higher mental functions. Though rough orderings of the traits are possible, and from time to time alluded to (ideational subseries, interpersonal subseries), it is explicit that there was no underlying conceptual scheme of the order of Murray's or Sheldon's or Kempf's. Also the special nature of the group in which it originated led to emphasis one-sided for general application; in Freudian terms a mere token recognition of *id*-functions, and a relative overplay of *superego*.

No one person, and no one school has sufficient experience of the range of human attributes to originate an inclusive schema which will not have important inadequacies. The best thing to do outside one's own territory is to follow someone who knows his way around there, and try not to stumble too often or too heavily.

For a proper foundation to purposes like the present (that is to say, systematic account of personality for correlating with other and generally more quantifiable data on the human organism), one should begin with certain basic concepts, applicable over the general range of organic behavior. Many advantages from this standpoint attach to formulations by Kempf ('41). The next step is to insights derivable from Sheldon and Stevens ('42). Together, these take one through *id* and pretty well into *ego* functions. Then one does wisely to study Murray, for the searching categorization of functions at or beyond the *ego* level, as well as an understanding of attempts to reach them experimentally. Finally, so much of Kurt Lewin as will not have been previously covered from other standpoints, and Gordon Allport for general perspective. Thus one derives an intelligent strategy (cf. Rosenzweig '44). For tactics, Hamilton already mentioned, will be the most generally practical guide; especially Murray and Lewin will have something to add, as the available resources permit.

The essence of Kempf's contribution is a wider view of the "anabolic-catabolic" functions, energy storing versus energy releasing as basal attributes, not to say determiners of behavior. The dichotomy is pervasive; comparisons of plants with animals, herbivores with carnivores, men with women are the simplest and most frequently made.[31] Functions up to and including the "basic personality" level of the present trait-series are well represented as varying balances of these quasi-anabolic and catabolic functions in a given individual. It is, essentially, variations in this functional balance that constitute the "personality" differences that are from time to time pointed out for insects and other arthropods.[32] Different breeds of dogs are especially instructive from this standpoint, and though differently oriented, the fundamental work of Stockard ('31) and its subsequent elaboration ('41) should also be consulted. According to strengths and weakness of these anabolic and catabolic functions, four polar categories are set up and characterized in large part as follows (Kempf '41):

> *A*+ *C*+: *Hardy;* maximal working powers and recuperative capacity; resistance to infections and exposure; healthiest under strong social competitions; preferences for strong to gentle stimulations; dominant under pioneering and severely competitive conditions; decreasing importance under easy conditions, which support survival and reproduction of less fit; feral animals generally, as opposed to domesticated types.
>
> *A*+ *C*—: *Hypokinetic;* "vagotonic"; slower in movement, speech, thinking; inhibitory conditioning easier than excitatory; good powers of self-restraint, obedience; stores energy well but without ready release to quick environmental demands; patient, enduring, consistent, plodding; resistance to disease next to hardy type; domesticated horses, cattle, poultry; St. Bernard dog.
>
> *A*— *C*+: *Hyperkinetic;* "sympatheticotonic"; fastest reactions; highest intensity of reaction to strong and weak stimuli; impulsive, impatient, craves excitement; under restraint becomes anxious, restless, confused; apt to panic under defeat; subject to anticipation anxiety; favored by "intimate excitations of city slums"; various anti-social types; various carnivorous animals; terriers except the Scotch.
>
> *A*— *C*—: *"Weak";* reaction speeds next to hyperkinetic; hyperinhibitory, hypersensitive; conditionable by weak stimuli, inhibited by strong

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[31] A like distinction pervades attempts at systematic description of personality. The typical psychiatric developments are strong anabolic, weak catabolic; excellently conceived for the assembly of relevant facts, but much less adapted to presenting them for comparative or correlative functions. Those of the "inventory" type are strong catabolic, weak anabolic; well organized for concise presentation of findings, and their quantitative treatment, but with no deep conceptual foundations.

Coöperative research projects in the social sciences, in these terms, tend to *A*+ *C*—. They function well enough at data gathering; in the ordered presentation of results to the learned world, they have been less effective.

[32] Arachnophils like the present writer may compare in this respect the stodgy, endomorphic *E. trifolium* with the wolfish mesomorphs *A. naevia* or *P. audax.* Closer observation distinguishes corresponding behavior differences among individuals of the same species. With reference to other, mammalian analogues in basic personality, cf. the accounts by Liddell and by Finger (Hunt '44, pp. 389-412; 413-430).

> stimuli; hypotonic postures; disorganized reactions to competitions, frustrations or to contradictory authoritative requirements; least resistance to disease and least powers of recovery; imaginative, artistic, affectionate, sentimental; lowered intellectual thresholds generally (cf. present Sensitive Affect) make for efficiency in skilled professions and clerical vocations; among dogs, King's spaniel.[33]

Very different levels of functioning are represented in these characterizations, e.g., physiological, postural, intellectual; it is presumably not intended to imply that a consistent relationship exists between the various traits assigned to the "hardy" group for example. Rather should one understand that, at the respective levels, these traits define what the general classification means. Kempf's $A+$ $C+$ would characterize in psychological essentials, perhaps the upper quarter of the present Basic Personality Highly Integrated. Probably no one of $A-$ $C+$ characteristics would meet the present requirements, and certainly no one of $A-$ $C-$ endowment. (It is explicit that these traits are looked on as constitutionally determined).[34] These four groups thus include the entire range of basic personality within the limits of the psychologically normal;[35] not merely that upper segment of the normal range that is included among the present participants.

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[33] Sinclair Lewis seems to have anticipated this insight in his character of Horace Carp (Elmer Gantry, Ch. VI): "He was a young man who resembled a water spaniel . . ." and with other traits somewhat as above. Note the relationship of this figure to the husband of Marjorie Carling in Aldous Huxley's *Point Counter Point*. Kempf ('41) further remarks, "Its proportion in populations increases with remarkable rapidity under easy, favorable environmental food and working conditions, not so much from its own reproductive capacity but as the result of the enormous number of genic combinations that can produce weak vital organs and constitutions, and the small number of genic combinations that can produce all strong and hardy constitutions." It is the most severely punished and eliminated, he goes on, by such great stresses as diseases, war (?!), starvation, and cold. Cf. Hooton, '45, p. 208 ff.

[34] A fundamentally similar conception, developed in an environmentalist direction, was put forward by L. K. Frank ('28) in terms of accumulated tensions and release. These are respectively the anabolic and catabolic processes formulated by Kempf; but whereas Kempf is concerned with capacity for storing and releasing energy as a fundamental property of the organism, Frank's emphasis has been on the rôle of nurtural influences in the channelings of such release as the constitutional factors make possible. The quantitative emphasis is thus on the side of nativism, the qualitative on the side of nurture. A dichotomy corresponding to syntonic and schizoid personalities is set up on essentially psychogenic bases ("objective" and "status" types), but for the degree to which either is developed in an individual by a given nurture, one must still appeal to native traits. These principles underlie much of the thought concerning native and environmental factors in sociality, set forth pp. 158 ff. Though they assign a larger rôle to nurtural factors than most of the present research group would be prepared to concede, Frank's formulation is as effective a presentation as has been given, of the lines of inquiry suitable in a research like the present, for evaluating nurtural influences. For review of later developments cf. in Hunt '44, Murphy, pp. 652-690.

[35] It is important to keep in mind that the concept of basic personality as "can he take it" (p. 135), denotes psychological resistance to environmental, exogenous, stress.

These ideas represent the simplest schema that is reasonably adequate to the assessment of basic personality integrations.[96] For the breakdown of these, with more systematic attention to attitudinal manifestations, one proceeds to the work of Sheldon and Stevens ('42; cf. also Hunt '44, pp. 526-549). Bipolar concepts such as Kempf's do not serve these more complex purposes; the tripartite base, viscerotonic, somatotonic, and cerebrotonic by names, is subdivided into 20 characteristics for each, frequently, though not always, continuous across the three. The continuity with Kempf is very clear, and the harmony of their concepts a token of their validity. Kempf's $A+$ $C+$ type is essentially the somatotonic of Sheldon and Stevens; the $A+$ $C-$ is close to their viscerotonic, while the $A-$ $C+$ and $A-$ $C-$ represent a dominance of their cerebrotonia.

As has already been noticed, a person receives a global rating in each of the Sheldon-Stevens components, on a seven-point scale, and these ratings probably tell more about his psychology than any three Arabic numerals likely to be soon available. One needs, however, only to observe the varied accounts attaching to a similar "temperament index" to realize how much is necessarily left untold. It is comparable to the situation with the Intelligence Quotient. Few will dispute the great serviceability of the Wechsler-Bellevue Scale as a clinical instrument; but only the crudest requirements are satisfied with a statement of its *"IQ"* (Rapaport '44). So here, in any attempt at correlating with other fields of observation, one properly looks to the items which are themselves the "components" of which the Temperament Index[97]

There is no reason why a Kraepelinian paranoia, or a circular psychosis, should not be endowed with a "well integrated" basic personality in this sense, any less than a future general paralytic; they not infrequently are. Cf. the two Highly Integrated Basic Personalities cited on p. 173.

[96] In a well-found phrase of Murray's ('38, p. 723) the test of any system is its "resolving power," to what extent does it coördinate the current facts. In this sense a very favorable, though by no means uncritical, appraisal is given the Freudian system. If one carries this optical analogy a step further, one finds that lenses do not have the same resolving power at all focuses, or at all stops of diaphragm. The analytic viewpoint is at its best in what has always been its prime function, the elucidation of psychogenic factors in adjustment difficulties. To the evaluation of constitutional factors in relation to the psychogenic, it is much less suited. Using the jargon, it is more apt in determining the vectors of cathexes, than the reason for the existence of a cathexis to become attached to any vector. The essays at trait classification as such are capable of much more development than they have received, cf. the critical account by Sears (Hunt '44, pp. 306-332).

[97] The author's use of "Temperament" has the classical sanction; it has been avoided here for its vernacular association with "temperamental." Equally with Kempf, Sheldon and Stevens stress the constitutional nature of these traits. Temperament, or some such expression, does have a useful function in denoting those areas of the personality considered dominated by inheritance as distinct from nur-

is made up. These items are the real strength of the Sheldon-Stevens system; nowhere has there been so clear and ordered a formulation of these basic characteristics, and their value for purposes like the present research is limited only in the way that all are limited, by the validity and precision of the instrument by which the ratings are made. In this case, it is the interview. It is conceded that there is no upper limit to what can be learned by such observation; one hour is cited as a minimum, and it is not clear how far this is from a point of diminishing returns. As several times this amount would be available in a research of the present orientation, supplemented by many extrinsic data, such a procedure is entirely feasible on this score.

From the present standpoint the more critical and distinctive items include food and sleep habits; attitudes toward bodily activity and exercise; towards risk and chance; towards noise; reactions to alcohol; to pain; when "troubled"; and persistent orientation towards the family circle as compared with emancipating activities of adulthood.

With the trait series arising out of the present case-material, the points of contact are comparatively few and indirect. The present Unstable Autonomic Functions finds some reflection in the physiological over-response of the cerebrotonic; and its converse, in the alimentary processes ascribed to the viscerotonic. Vital Affect ties in with the Energetic Characteristic and with the Love of Physical Adventure, which are ascribed to the somatotonic. Practical Organizing is closest to the power-dominance-ruthlessness cluster of the same component; a partial reflection of Pragmatic may also be found here. Bland Affect in a somatotonic setting becomes psychological Callousness; in the viscerotonic it appears as Complacency; the cerebrotonic correlate in Sensitive Affect. The Sociophilic cluster of the viscerotonic is here represented in Sociable, Verbal Facility, and Human Values. The respective definitions associate Lack of Purpose and Values most with the viscerotonic, least with the cerebrotonic. Similarly the cerebrotonic "resistance to habit and routine" is descriptively a negative of Just-So, but how far the clinical facts would bear out such a negative association of cerebrotonia with Just-So must still be looked on as an open question. The sociophobic traits of cerebrotonia are of course represented in Asocial, and their conflicts with the sociophilic, in Shy. This it may be noted, gives a wholly

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ture. As correlative to *somatotype,* this presentation uses the term *psychotype,* to denote the existing balance of Sheldon and Stevens' viscerotonia, somatotonia, cerebrotonia. As to nature-nurture relationships, the best supposition at present is that native somatotype gives a real bias in the direction of a corresponding psychotype; but that environmental influences may considerably modify what psychotype actually issues at given phases of development. Instances occur in the chapter following.

constitutional basis for Shy instead of the environmental factors postulated p. 160. For a similar interpretation of hostile reactions, cf. p. 37 of Sheldon and Stevens' work.[38]

Perhaps a fifth of the 60 ratings in the Sheldon-Stevens scale are made directly, from observation of behavior (e.g., posture and movement). None of them depend on *experiment or "test," and few of them are open thereto.* The point of closest contact is that of reaction time; a feature which is similarly stressed by Kempf. This function has been the subject of a good deal of experimental work, whose status in these generalizations is not altogether plain. Less evidence is given than one could wish[39] Certainly there are individuals who make the general impression of being "quick" and slow in their psychological processes; but what relation this has to measured speed in simple or choice reactions, to sound or to light, or to verbal stimulus, will bear much clarification (cf. Smith and Boyarsky, '43). *Kempf puts forward the well-tried procedure of the word-association test* as a criterion; *a* criterion it certainly is, subject to cultural equalities and one or two internal controls (e.g., the speed of associating simple opposites), but it is problematical how far speed here is equivalent to speed in the reactions of automobile-driving, for example. One dislikes being forced to impressionism in so eminently quantifiable a function as mental speed; but it is quite possible that the laboratory does not measure just what is meant by speed in these instances. Especially in what is said of cerebrotonia it seems to denote an easily evoked, low threshold of response, rather than a specifically fast one. The distinction is that of being "set on a hair trigger" as contrasted with being "quick on the trigger." This low threshold is what Kempf's "catabolic" items mostly denote, as do L. K. Frank's tension-and-release formulations. It is at least as well suited to those of Sheldon and Stevens as the stress on elementary speed.[40]

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[38] An item that might well find a specific place in their series concerns the humor type. The point is raised on p. 53, but not differentiated as it might be. In these terms, viscerotonia is the base of the comic; cerebrotonia, of satire. It is probably also hardest for cerebrotonics to become good lovers or good parents.

[39] The reader unfamiliar with the Sheldon-Stevens work may here want reassurance on one point. If, e.g., slow reaction serves as a criterion of viscerotonia, obviously viscerotonics will show slow reactions. An intracorrelation chart for the 20 viscerotonic traits gives positive coefficients uniformly over 60; those for somatotonia and cerebrotonia are higher (pp. 506-508). Yet one could wish there were less chance of the halo-effects which are the bane of rating scales.

[40] It is wholly consistent with the facts for intellectually alert cerebrotonia with quick simple reactions, to be slow and ineffective in more complicated ones, where lower thresholds arouse conflicting response patterns; the "hyperattentionality" of Sheldon and Stevens. Among the commanders mentioned on p. 148, compare in this respect McClellan and Stonewall Jackson.

Considering that their material is gathered so largely from cultural backgrounds similar to those of the present research, the Sheldon-Stevens trait-series is of a "catholic" nature, applicable very generally over the range of individual differences. This is a most advantageous feature where there is likelihood of comparisons between differing socio-economic groups, even within the same national culture. It is indeed questionable if the Sheldon-Stevens formulations do not carry one close to a point of diminishing returns for the functions ordinarily understood as personality; this has many other components, but in most populations they would not turn up distinctively enough to furnish bases for sound evaluations. Much of the present trait-series is thus restricted to an intelligentsia.[41]

Upon such trait-systems as hitherto considered, Murray superposes a particular qualitative refinement. In Kempf one deals with very general differences of degree, as Anabolic minus, or Catabolic plus. Sheldon and Stevens indeed employ similar concepts under a different nomenclature, but give them a systematic qualitative breakdown. One thinks not simply of gross amounts of say anabolic or viscerotonic constitution, but more and more of the directions that it takes. It is along this line that Murray's thinking has been especially productive.[42]

A special feature of Murray's formulations is the adaptive emphasis; "Harmavoidance; Blamavoidance," for example. They represent mental or

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[41] To those familiar with one of the important novels of modern English literature, the *Point Counter Point* of Aldous Huxley, the meaning of these components may be clarified by the following psychotypes, etc., suggested by principal male characters:

	Sheldon-Stevens					Woods
	Visct.	Somt.	Cerbt.	Kempf	Soundness	"Outstanding Traits"
Bidlake, J.	6	5	1	*A*+ *C*+	A	BPH, VTA, CL, CI, SCB
Bidlake, W.	4	2	5	*A*— *C*+	B	BPL, DM, SVA, CL, SHY
Burlap	6	2	3	*A*+ *C*—	B	BPH, BDA, IDL, VF
Illidge	4	2	5	*A*— *C*—	C	UAF, BPL, IAT, PGC
Quarles, P.	2	1	7	*A*— *C*—	D	BPL, SVA, SI, CL, ASC, CI
Quarles, S.	5	2	4	*A*+ *C*—	C	BDA, IDL, LPV
Rampion	4	4	3	*A*+ *C*+	A	BPH, VTA, SVA, CL, CI, VF, SCB, SSM
Spandrell	2	3	6	*A*— *C*+	E	BPL, SI, IDL, LPV
Webley	4	6	1	*A*+ *C*+	A	BPH, VTA, POR, VF, SSM

(Soundness classes of *D* and *E* are assigned where the level appears clearly below that of the group observed in this research.

[42] For an effective condensation of this system, statistically oriented, cf. Horn ('44).

conduct attributes which somehow make it easier for the organism to get along. Murray conceives them as "needs"; Joseph Conrad would have called them "profitable illusions." They are of course not needs in a general or coercive sense, as are food or drink, but adaptive devices; a given personality is distinguished by what sorts of these adaptive devices it uses, and by how far it really does "need" them.[43] Their enumeration is more closely related to the present series than is that of Sheldon and Stevens, possibly because the material studied was generally more like the present; it is a link between the two; less "cerebrotonic" than the present, more so than the other. Special points of contact with Sheldon and Stevens would be found, for their cerebrotonia, in such categories as Autonomy, Cognizance, Defendance, Inviolacy, Seclusion; for somatotonia in, e.g., Aggression, Endurance, Acquisition, Extraception, Change; for viscerotonia in, e.g., Affiliation, Succorance, Sameness, Deliberation.

The most striking comparison of the present categories with those of Murray is in difference rather than likeness. The participants in the present research were specially selected for soundness of adjustment (but cf. Hooton '45, pp. 71, 75); in Murray's material the selection may have been rather in the other direction: "Most of our subjects were carrying what seemed to us a heavy load of crippling anxiety, inferiority feelings, guilt feelings or dejection" (p. 730). In such individuals, attributes like Dominance or Exposition or Inviolacy might well appear as "needs" whereas in the present material they would impress one as simple and occasional characteristics, much as weight or hair-color. Many of Murray's categories have no counterpart in the present trait-series. The investigator who supervised its use (W.L.W.) was not without contact with Murray's work, and a reasonable explanation for the absence of these categories is that what they denote was not sufficiently represented. Murray's material may be more nearly representative of a student body at large than is the present, but it is again unrepresentative of a general population, and there can be little doubt that by such a standard it overstresses the ideational, though not to the same extent, as the present.

Murray's task was to follow the inquiry into human personality where it led him; not as at present, to coördinate a series of variables with other fields of study. The cardinal-central-secondary trait formulation of Allport ('37,

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[43] Note the definition of cathexis as possessed by "an object that evokes a need" (Murray '38, p. 105) whereas in the traditional sense needs are endogenous, e.g., hunger; satisfied indeed by an object from without, but all too independent of them in being evoked. The distinctions of "need" vs. "trait" etc. (cf. Murray '38, pp. 712 ff.) are from the present standpoint hardly relevant.

p. 337) is more appropriate there (focus on single personalities, psychography), than here (focus on comparisons). A greater flexibility of procedure was appropriate, indeed necessary, than would be feasible in the present setting, where there must be enough uniformity to make comparisons possible. To an unexploited extent this must exist in Murray's material also; but probably lends itself to a treatment like the present, by "outstanding traits," rather than to item by item ratings as in Sheldon and Stevens, and hardly at all to anything summative, as in the "Inventories."

From a procedural standpoint Murray's work also has a distinctive position. Thus the interview had by no means the dominant rôle assigned to it in the present research, and far more relative weight was given to observing reactions in various standardized situations.[44] Certain of these, as Thematic Apperception and Level of Aspiration, have since developed into important accessories to this general field of inquiry. The essential feature however, is the trained alertness of the several investigators who looked after these specialties, to the general conceptual scheme, and the direct evaluation of behavior details in terms thereof. No procedure could be better as a teaching device; that the understanding of the personality for present purposes is thus increased in proportion to the greatly increased expenditure, is less clear. But the resulting data are so much more objective, and their integration with other disciplines so facilitated, that one quite understands the regret expressed by Hooton ('45, p. 193), that the psychometric work of the present research was not oriented further in this direction. The historical reasons are of minor relevance now; but it would have been unwise to sacrifice any of the intellectual measurements.[45] These are personality features in their own right, and the total picture can be seriously misunderstood without them. When sufficiently observed they have their "need" contributions also (Achievement, Aggression, Blamavoidance, Exhibition, Exposition, Infavoidance, etc.). The opinion is offered that in the state of the respective techniques, the wisest policy for a research like the present is to coördinate the work of all observers around a specific trait-system, as did Murray; to give the interview a relatively larger place than was appropriate to Murray's purposes, and test procedures a somewhat smaller, or more experimental, rôle than there.

In sum, the basic data of personality organization, for coördinating with other disciplines, should be organized somewhat as follows: There should be a series of categories that embody traits common both to the special population studied, and to various other populations with whom comparison is relevant. Many of these would be found represented in the concepts of Sheldon and Stevens. These should be predominantly "source" traits. In the present series they are typified by Unstable Autonomic Functions, though this would appear in reverse, as Stability of Autonomic Function. Possibly it would be broken down into various phases of this function. For the most part it would be necessary to use rating scales, of not less than four or more than seven steps; unless some more direct quantitation is available. In this portion of the trait-series, every individual is thus comparable with every other. Superposed upon this is a group of traits less generally applicable, and which enters only where the trait is "outstanding" for presence or absence; though it must be specified what "outstanding" means, as an extreme 10 or 20 per cent of the individuals studied. Estimated one sigma or more from mean, i.e., upper and lower 16 per cent, is a pertinent suggestion by Wells and Ruesch ('45, p. 14). "Surface" traits would predominate at this level. Absence of rating denotes simply that the trait presented no special features in that individual. This is the sort of rating represented in the present data, though usually at one end of the scale only. Over and above this, there must be provision for any features too highly specialized to embody in a trait series, but whose presence clearly gives the remainder of the picture other than its intrinsic meaning; e.g., some marked physiological disability (cf. the account by Shock in Hunt '44, pp. 582-618).

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[44] Hunt ('44) naturally gives a considerable account of such procedures, mainly in the contributions by White, Sears, Lewin, Miller.

[45] Formal intellectual functions are in a category conventionally detached from "personality," hence a comparatively token representation in Murray's research.

Such are the conditions imposed where the objective is the correlation of data from various disciplines and individuals, rather than the most effective understanding and description of single individuals. The latter function demands the utmost eclecticism in procedure and freedom in evaluation, such as is not compatible with the former. Hamilton's work probably represents the minimum of organization adequate to demands like the present, Murray's the maximum that has been applied. But in no part of this field are organization and processing a substitute for insight; and this must now be alert against the tyranny of numbers no less than the tyranny of words. Praxiteles could no doubt have learned something from Euclid; but Euclid would hardly have insisted on showing him his job.

VII. WAR RECORDS

When the present research began, in 1938, it was predicated that its essential meaning would rest on follow-up; on how the past history and contemporary observations were related to modes of later life. Subsequent events have largely altered the proportions of this outlook. War conditions impose regulations of behavior, and coerced stresses of effort, far in excess of peacetime pursuits, especially those of a libertarian culture. Greater and different demands were more quickly made on the adaptive powers of young men generally, than was to be anticipated. How did the present group meet these demands, as compared among each other, and to a more limited extent, with the armed forces generally?

The efforts to keep in touch with the participants, often in distant and difficult environments, have met with considerable success. Account of the situation as of early 1945 is given by Hooton ('45, pp. 169-178), and by Heath ('45, pp. 99-102). The present treatment is based in part upon data available in these sources, but follow-up is brought down generally to May 1, 1945, and in the case of those receiving awards, as much later as practicable. At this writing the reported casualties in the group, resulting directly from enemy action, include four dead, four wounded, and one missing (cf. Heath '45, p. 100).

General distribution of the participants who were contacted as of May 1, 1945, is given in Table 8.

TABLE 8

	Army	Navy	Marine Corps	Coast Guard	Other services	Civilians
Commissioned officers	66	82	4	3	0	X
Non-commissioned officers	23	4	0	0	1	X
Privates, privates 1st class, cadets, apprentice seamen	27	11	0	0	1	X
Total	116	97	4	3	2	37

Of the total group, only 14.3 per cent were outside the armed services. This percentage does not represent a rejection rate, which cannot be stated precisely but is certainly much smaller (normal rate for this age group 20 per cent); the actual location of the civilian group being 28 in war work, mostly essential industry; six students, two in peace-time occupations, one citizen of a non-belligerent country.

Proportionately the naval establishment attracted rather more of the group, and it contains a distinctly larger percentage of commissioned personnel; among the non-commissioned, the Army shows an excess of 50 : 35.3, the

Navy a deficiency of 15 : 29.6. The naval group is perhaps more likely to be selected on the basis of special motivations.

Three grades of post-college adjustment, to both military and civilian life, are recognized: Excellent, Normal, and Difficult[40] (cf. Heath '45, p. 101; Hooton '45, p. 173. This is a subjective assessment, expressing the man's own attitude towards his work. It is not necessarily related to the manner in which this work is being performed.) Only the Army, Navy, and Civilian groups are of sufficient size to make the figures of present relevance, as given in Table 9.

TABLE 9

	Army	Navy	Civilian
Excellent	15	17	26
Normal	82	66	7
Difficult	12	6	3
Unknown	7	8	1

Between these two branches of the armed services there is nothing approaching a significant distinction, though what trend there is favors the Navy. For the civilian group the conditions are not comparable, since the average adjustmental demands cannot be regarded as of the same order, externally at least.

As is understandable, a somewhat larger proportion of those in the Navy *were outside the continental United States*, as shown in Table 10.

TABLE 10

	Army	Navy
In U. S. A.	63	39
Outside U. S. A., including Naval Sea Duty	53	58

This is of some interest in relation to the marriage rate among the participants, which is notably higher for the naval personnel, as shown in Table 11.

Hooton ('45, p. 172) suggests a relation between this and a tendency to more masculine body build in the Navy group.

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[40] Definitions of the adjustment grades are:

Excellent: No note of dissatisfaction. Keen interest and enthusiasm for work. Success in dealing with men.

Normal: No serious difficulties or dissatisfactions. Good success in dealing with men. Enthusiasm for necessary job, in spite of personal dislikes and (if in armed forces) a desire for the war to be finished and to return to civilian life.

Difficult: Obvious dissatisfactions with work, difficulties in getting on with men or superior officers, dissatisfactions of rank and promotion, unhappiness or other evidence of lack of success.

TABLE 11

	Army	Navy	Civilian
Number married	27	39	16
Per cent of respective group	23	40	43

A classification as to combat duty is attempted, though again the services are in their nature not closely comparable. For the Army it denotes "actively engaged in combat, or assigned to combat units in a combat capacity. Purely administrative or technical work, even though with a combat unit, would be classified as non-combat." For the Navy it denotes "stationed on any ship that operates in the war zone, even though duties are largely administrative, since nearly every man aboard a ship has administrative duties along with battle station duties" (cf. also Hooton '45, p. 171). For these definitions the figures are given in Table 12.

TABLE 12

	Army	Navy
Combat duty	28	46
Per cent of respective group	24	47

From these data as a base, examination may be made of relationships to the psychiatric categories; that is the soundness classes, and the trait-series proper.

As to the soundness classes, the Army shows some trend to deficiency in the *A* class, the Navy an excess in the *A* and deficiency in the *C* class. But the observations are throughout close to par, the figures being shown in Table 13.

TABLE 13

Soundness class:	*A*		*B*		*C*	
	Observed	Par	Observed	Par	Observed	Par
Army	38	42.6	54	51.2	23	21.0
Navy	42	33.7	37	40.5	12	16.7
Civilians	12	13.7	16	16.5	9	6.8

The trend to excess of this previously judged "soundest" class in the Navy, can be related to the similar excess of "excellent" adjustments in this service, as is examined subsequently.

Considering the Army and Navy delegations against the trait-categories, there are for the most part no differences of present moment. The principal ones are given in Table 14, only that for Just-So being within accepted limits of statistical significance.

TABLE 14

	Army		Navy	
	Observed	Par	Observed	Par
Unstable Autonomic Functions	19	14.2	7	11.8
Just-So	7	16.4	23	13.7
Creative-Intuitive	13	8.7	3	7.3
Cultural	30	23.8	14	20.0
Verbal Facility	26	20.6	12	17.3

The meaning of these data is problematical. From a psychoanalytic standpoint, the situation with Just-So in the Navy would be easier to understand if reversed. The singular preponderance of the Creative-Intuitive group in the Army can again be understood on a clinical basis only. Possibly it represents an absence of positive motivation in some other direction. It is a fair supposition that none of these differences is related to differences of military and naval services as such.

Of greater relevance is the relation of the trait-categories to the character of subsequent adjustment. This was first embodied in an unpublished series of calculations by Seltzer, which forms the basis of the discussion by Hooton ('45, p. 174-178). The present figures embody slight changes in the adjustment ratings based upon subsequent follow-up; though the figures are essentially similar.

The data give an opportunity to evaluate an overall judgment as in the soundness class, against attempts to break down this judgment into constituent elements as in the trait-series. Some idea has already been given of the degree to which the soundness classes are "loaded" with the various traits; e.g., Vital Affect and Sociable for the *A* class, Unstable Autonomic Functions and Lack of Purpose and Values for the *C* class.

The relation of the current adjustment grades to the soundness classes is given in Table 15.

TABLE 15

	Soundness Class					
Adjustment	*A*	Par	*B*	Par	*C*	Par
Excellent	25	12.8	7	13.9	0	5.3
Normal	52	60.0	72	65.2	26	24.8
Difficult	3	7.2	8	7.8	7	3.0

The small civilian group exhibits no deviations from par, which are of present relevance.[47]

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[47] Figures compiled by Seltzer for total follow-up sample (230 cases) gave relationships of the adjustment grades to dominant mesomorphy and dominant ectomorphy. They are throughout close to par. There is a striking absence of dominant endomorphy.

Among these associations, the present limits of significance are met by the excess of the *A* class in the Excellent adjustment grade; by the deficiency of the *C* class in this Excellent grade, and by the excess of the *C* class among the Difficult adjustments. There are no tendencies not readily explicable, but it is to be noted that throughout, for all trait-categories, the proportion of Normal adjustments is close to par. While none of the *C* class is assigned an Excellent adjustment, the Normal grade is given to all but a few cases. Excellent adjustments have been rare among those not previously assigned to the *A* soundness class; on the other hand, nearly half the expectation among these "soundest" have rated Difficult adjustments. The Study staff were apparently better able to assess the participant's capacity for enjoying his work, than the likelihood of his having trouble. This is in line with the old psychometric axiom, "The high man *can* get a low score; the low man *can't* get a high score." Missed possibilities of trouble could exist in an *A* man, but the *C* class would not be assigned without actual evidence of such liabilities.

How do the associations of adjustment with these overall *ABC* ratings, compare with the breakdown attempted in the trait series? Every trait of the series has some representation in all adjustment grades. Two associations are stronger than those observed with the *ABC* classes; that of Vital Affect with Excellent adjustment, and that of Basic Personality Less Integrated with Difficult adjustment. With these two traits one may properly consider also the situation with Basic Personality Highly Integrated. It should be recalled that *BPH* and *BPL* are themselves overall judgments, whose meaning resembles that of the soundness classes. The relation of these three categories to the adjustment grades is given in Table 16.

TABLE 16

Adjustment	*BPH*	Par	*BPL*	Par	*VTA*	Par
Excellent	26	20.6	1	4.6	17	7.6
Normal	96	93.8	19	21.1	26	34.6
Difficult	3	10.3	8	2.3	3	3.8

As previously remarked, Basic Personality Highly Integrated is too inclusive a category; here it is distinguished for keeping one out of difficulty in adjustment, more than for promoting its excellence, in which respect it is less effective than the soundness class *A* above. Vital Affect on the other hand, is distinguished for promoting excellence, but promises little or no protection against difficulty, its Difficult adjustments being practically par.

Basic Personality Less Integrated again corresponds closely in properties to class *C;* it weighs heavily against Excellent adjustment to the armed services, is no bar to Normal adjustment, and does somewhat predispose to difficulties therein.

Other notable excesses for Difficult adjustments are found with Unstable Autonomic Functions, Sensitive Affect, Creative Intuitive, Cultural, and Asocial. None of these findings should occasion surprise. The general situation for these traits is given in Table 17.

TABLE 17

Adjustment	*UAF*	Par	*SVA*	Par	*CI*	Par	*CL*	Par	*ASC*	Par
Excellent	2	3.8	7	5.4	1	2.3	10	7.1	1	2.8
Normal	16	17.4	20	24.8	9	10.5	25	32.4	12	12.7
Difficult	5	1.8	6	2.7	4	1.2	8	3.6	4	1.4

While the traits here denoted may thus be looked on as predisposing to armed service adjustment difficulties, it is clear that they are no bar to adjustments of the best grade. Elsewhere there is no relationship that meets the criterion of significance, but categories can be of interest for a very lack of association with armed service adjustment. In the following (Table 18) trends are represented which would soon attain significance if maintained in a larger sample.

TABLE 18

Adjustment	*DM*	Par	*SI*	Par	*VF*	Par	*SCB*	Par	*LPV*	Par
Excellent	3	5.0	5	8.3	7	6.3	12	8.2	3	7.4
Normal	22	22.6	39	37.7	25	28.5	34	37.5	37	33.8
Difficult	5	2.5	6	4.1	6	3.1	4	4.1	5	3.7

Like Vital Affect though in less degree, Sociability rates as a help to the Excellent adjustment grade but offers no protection against difficulties; this is more understandable for Vital Affect than for Sociable, where one would be justified in expecting that for the normal individual, it would so protect. One may also be surprised that Dominance of Mood and Selfconscious-Introspective appear no greater liabilities. Lack of Purpose and Values seems still to operate as a handicap not offset by motivations derivable through the war situation.

Finally, there are traits noted for lack of association with armed service adjustment. One might expect this with Bland Affect, less so with Practical Organizing, Shy, and Pragmatic. These associations are given in Table 19.

That in their meaning for armed service adjustment there should be no

TABLE 19

Adjustment	*BDA*	Par	*POR*	Par	*SHY*	Par	*PGC*	Par
Excellent	4	5.4	16	14.0	3	5.0	13	12.5
Normal	28	24.8	62	64.0	24	22.6	57	57.2
Difficult	1	2.7	7	7.0	3	2.5	6	6.3

more difference than this between such qualities as Practical-Organizing and Shy, is further testimony to the uncertain meanings that can be carried by a trait-name which is an abstraction. Practically organizing what? Shy about what? Ligon has remarked that a most aggressive backfielder of a football team may become socially helpless on having thrust into his hands a teacup and a piece of cake. Here we may be observing this process in reverse. A further consideration in the case of Shy is that the conception of this trait postulates an innate social aptitude environmentally frustrated. An environment in which one can, indeed must, sink his individuality can be to such a shy person a welcome means of escape from himself.

> "Body and spirit I surrendered whole
> To harsh instructors—and received a soul . . .".[18]

As to Practical Organizing, there will be other evidence that this attribute is no special asset at the levels of rank here in question. If the concern were with field officers, the more so with general officers, and their naval equivalents, the situation could be different.

In discussing the properties of the "outstanding traits" as such, which has been the theme up to this point, it is easy to forget that each trait does not exist in the personality for itself, or in a pair, but is modified by a large complex of other traits, often not less marked than itself. One may speak of a "Vital Affect personality" only as one speaks of a "tall man." In order to show such relationships as have here been described, a trait must be so dominant as to break through these modifying influences and give something of its own color to the entire personality. So that these Excellent, Normal, and Difficult adjustments are reached not in virtue of the traits above represented, but through a trait configuration which reacted upon its surroundings in such ways. What are these configurations in various individuals who have been otherwise distinctively characterized?

Four sorts of participants will be considered from this standpoint. First, a random selection from those Excellently adjusted in the armed forces, is compared with a similar selection from those adjusting with Difficulty. A further comparison is then made with individuals elsewhere specially observed from a psychometric standpoint (Wells '45), and with recorded participants in the Study, who have received conspicuous military or naval awards.[40]

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[18] Kipling: *Epitaphs.* In civilian life one also finds that shy people may be quite at home in theatricals, of the amateur sort at least, for the precise reason that there they can cease to be themselves.

Brief accounts of six participants, three of Excellent and three of Difficult armed service adjustments, are first offered in illustration. There are considered the soundness classification and the trait-series; then certain data from the physiological, anthropometric, and psychometric fields. These latter findings are as a rule cited only when they deviate considerably, e.g., one sigma or more, from the mean of the Study group as a whole.

Case 1-E among these was, when observed as a sophomore, assigned the rating of *A* for soundness, and the trait configuration of *BPH, VTA, POR, VF, SCB, PGC.* This represents a character structure favorable to military or civilian success. Its possessor was also athletically distinguished, which is partly attested by an unusually low blood lactate (about 1.3 sigma under mean) for those who completed the treadmill run (cf. Heath '45, p. 68). Tidal air, representing air inhaled or exhaled at rest, was remarkably high, over 3 sigma above means. Body-build was a blend of meso- and ectomorphy, with rather less of the endomorph; the history attests a psychotype essentially to correspond. Only one "disproportion" is noted, but the mean is less than three. Psychometrically he was well above local intellectual average, though singularly low on such criteria of mechanical aptitude as were available. In the physiological measures he was undistinguished except as above.

The excellent adjustment recited involves a commission with two promotions, and a very satisfactory marriage. The duties involve considerable flying with associated administrative work. An influence of the outstanding traits above is traceable in his reports: as Practical Organizing in his administrative capacity, and Verbal Facility not to say Vital Affect, in the way he expresses himself about his duties. No actual combat experience is reported, but fitness therefor cannot be less than that of others in this series who have so distinguished themselves.

Case 2-E presents the more complicated picture of soundness class *B,* with the traits of *UAF, BDA, DM, SDR, IHB, SI, SHY, HV,* and *LPV.* This is a picture from which one might readily expect a less favorable outcome in war service. In other respects it is worth noting (Self-Driving above) that he did not complete the treadmill run, though the lactate he built up was some half a sigma above mean. Respiration rate was slightly over a sigma above mean, and the sighs were over two sigma more frequent than the mean. Body-build resembles 1-E as to lack of endomorphy, but there is not so much of the mesomorph or ectomorph. It gives little clue to the psychotype. The amount of body disproportion is over a sigma above mean. Psychometric work was characterized by better production in the more creative procedures than in the multiple choice variety, which were indeed, low for the present group.

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[40] As they are taken up individually, they are numbered for present identification. The number is followed by the initial letter of the adjustment grade; *E, N,* or *D.*

In addition to the less favorable trait configuration, it will be noted how many of the more objective functions are outside ordinary limits. It is a relatively unbalanced profile. The key to the situation is in the trait Self-Driving, for which this man has long served as the Study's stereotype. In virtue of this, he has made much more of the comparatively moderate intellectual endowment than would most of his fellows, and apparently compensated other liabilities, e.g., Unstable Autonomic Functions. Extra-curricular interests were essentially non-athletic but of considerable social significance, and pursued with such vigor as to leave lasting and salutary impress on the undergraduate life of the institution (in the face of a rating of Lack of Purpose and Values).

He completed a medical education, made a first-rate marriage, and at last accounts was participating, with commissioned rank, in one of the most difficult operations the armed forces undertook.

Nowhere in the long series of objective measures is there a hint of the qualities that make this man; if anything, the contrary. Projective tests material on this participant is inadequate, but Rorschach procedures and the like would have critical interest. It is believed that certain criteria in graphology would have picked it up, but perhaps not to the extent that it dominates the picture.

Case 3-E has a profile more resembling 1-E, that is: Soundness class *A*, traits *BPH, VTA, CL, VF, SCB, SSM, HV*. It differs from 1-E in the absence of Practical Organizing and Pragmatic, with the accession of Cultural, Social Science Motivations, and Human Values. Much of this difference can be accounted for on a nurtural basis; the socio-economic antecedents of 1-E are quite modest, while in 3-E they are those of wealth and distinction. Just as habits of self-care are learned more readily by children of the poor than by children of the rich, so in maturer years the motivations of the less socially favored turn rather towards the practical, those of the more favored towards the cultural (but cf. the counter-indication, p. 150). The present participant was psychiatrically described as the "most normal boy" who had been seen; there is well-balanced extra-curricular activity, academic record above average, below what might have been accomplished, but perhaps not without sacrificing equal values in other spheres. Except for rather inferior manipulative functions, the psychometric record is among the best all-round in the research; native mental alertness considerably above the performance in academic aptitude tests, consistently with the academic record above mentioned.

As compared with 1-E on a physiological basis, recumbent pulse was much slower, indeed over a sigma below mean. Basal metabolic rate was not quite a sigma lower than in 1-E. Both completed the treadmill run, but the lactate built by 3-E was nearly a sigma over that of 1-E, though still a little below group mean. The various data on respiration are unavailable for 3-E. Either his health was less good or there was a disproportionate concern for it, for there was a specially large number of visits to the University clinic, over three times those of 1-E. The former supposition seems to correspond better with the facts; and injuries through athletics account for some portion of the visits. The somatotype shows more endomorphy and especially mesomorphy, less ectomorphy than 1-E, with a good correspondence to psychotype.

In the armed services there is commissioned status, with active duties in combat aviation. One regrets not being able to quote precisely the attitudes expressed, which reflect all the morale and enthusiasm for the work that any commander could wish. 1-E would fight as well, 2-E may well have done so, but neither would have enjoyed it as much.

For a group selected as these individuals are, a very understandable source of difficult adjustment would be an assignment heavily loaded with paperwork and routine duties such as are among the needs of war administration, and for which the background of persons trained like these, would especially equip them. No doubt this is an occasional factor in difficult adjustment, as is indeed to be illustrated, but it does not seem to be a general one. If one separates the adjustment grades according to the previously cited categories of combat and non-combat service, the actual coincidences are throughout very close to par. The data support the inference that it is the adjustmental capacity of the individual which governs, rather than the particular type of situation to which circumstances require adjustment (for data on other Excellent adjustments, cf. Table 20).

The difficult adjustment may be introduced by a configuration (Case 11-D) of soundness class *A*, but among the assigned traits, only Creative-Intuitive, Cultural, and Verbal Facility; a triad that only partially bears out the global soundness estimate, and hardly promises well for at least the common idea of adjustment to the armed services. It is fairly consistent with the psychometric picture, which is one of the Study's extreme excesses of verbal over quantitative accomplishment. There is some reason to look on this verbalism as more a matter of incentive and interest than of native aptitude. With the above qualities there should have been a better projective response than there was; by themselves the psychometric observations would hardly suggest the *A* soundness class.

Physiologically, recumbent pulse is over a sigma above mean and basal metabolic rate low to a similar extent. Respiration rate is nearly two sigma below mean. Somatotype is close to the group average, with mesomorphy predominant; there should have been considerably more ectomorphy to match the psychotype, which is rather on the cerebral side.

As in case 2-E, these various disjunctions create doubts as to basic integrations, and here there is no Self-Driving to offset them; rather the contrary. Reviewing the history, one feels that a *B* soundness grade would have been as well justified, as it would be better by the outcome to date.

In the armed forces there is non-commissioned status, no record of combat duty. This is apparently one of the instances in which service needs lead to assignments altogether contra-indicated by aptitudes and inner incentives. Highly ideational types such as this one are specially subject to such situations, and their very intellectual development makes it no easier to adjust to them. However, a considerable proportion of this research group have managed it, and it is believed that in civil life also, this man's best adjustments are confined to a rather specialized environmental range.

Case 12-D receive in the present psychiatric schema the assignments of *C* grade soundness, and the traits Basic Personality Less Integrated and Lack of Purpose and Values only. He is actually a complicated individual of considerable talent, having held important extra-curricular assignments in college, as well as having maintained an academic record above average, though below capacity. Psychometrically he displays the verbal excess of 11-D though less markedly, the quantitative record being itself well above local average. The manipulative record is among the best observed and projective response is well developed, though itself somewhat questionable from the adjustment standpoint.

The physiological data are fragmentary but in the treadmill run he built up one of the highest blood-lactates observed in this series, before relinquishing the task at a point well beyond where it is usually dropped by those who are unable to complete the run. The somatotype is heavily mesomorphic, and as in the previous case does not properly represent the "cerebrotic" components in this man, notably greater than in the previous 11-D. The question seems worth examining if men who, like this one, differ markedly in psychotype from the corresponding somatotype, are comparatively disposed to adjustment difficulties. Sheldon and Stevens feel strongly that this is so ('42, pp. 373 ff.). In studies of handwriting with this group, there has been observed reduced agreement of graphology with the criterion in the *C* soundness class, and this individual is one where such disagreement is very marked.

There is commissioned status, but much dissatisfaction with the rather inactive nature of the work, for which he is more than competent, but which is itself incompetent to the heavy somatotonic demands of his make-up. On the other hand, he as yet evinces hardly enough of the Sociable component to make a close-contact leader of men. At this stage of his development, one would think most of him, psychologically, as a paratrooper or combat flyer.

Case 13-D has a soundness classification of *C*, with a trait profile of *BPH, VTA, DM, JS, POR, SSM;* thus little in common with the other two. Remark has been made elsewhere upon the apparent mutual contradiction of the *C* soundness and Basic Personality Highly Integrated, and this is one of the cases in point. The issue lies with the characteristics here represented by Dominance of Mood. The mood-swings come very close to what could properly be regarded as normal limits, hence the *C* soundness grade. On the other hand there is the disposition (cf. p. 141) to regard these swings as essentially endogenous; not a function of persistent inability to manage the environment, as would be denoted by Basic Personality Less Integrated. The young man is rated BPH on his capacity to "take it" from, not to say dish it out to, the environment, when his own condition is normal for him. The other traits assigned embody nothing inimical to armed service adjustment, and some favorable qualities (Vital Affect).

In the psychometric record there is some resemblance to 3-E; e.g., basic alertness records superior to functions which depend more on academic accomplishment. A fairly rich response to Rorschach figures was most distinguished by preponderance of "object" responses, and there was hardly the development of color that one might have expected in one of his affective life.

Physiology showed recumbent pulse a sigma below mean, but no other functions as far off as this. There were no "sighs" in the respiration period, which is unusual, but the contrary is more associated with his make-up. In body-build he closely resembles 12-D; is actually the most heavily mesomorphic individual of those discussed. The psychotype would put somewhat more weight on a "viscerotonic" component, but is otherwise fairly con-

TABLE 20

Case	1-E	2-E	3-E	4-E	5-E	6-E	7-E	8-E	9-E	10-E	11-D	12-D	13-D	14-D	15-D	16-D	17-D	18-D	19-D	20-D
Soundness:																				
A	X		X	X	X	X	X	X			X						X			
B		X							X	X						X			X	X
C												X	X	X	X			X		
Traits:																				
UAF		X																	X	
BPH	X	X	X	X	X	X	X		X				X				X	X		
BPL												X			X					
DM		X											X						X	
VTA	X		X		X	X	X	X					X							
BDA										X							X			X
SVA								X	X							X				
JS						X							X				X		X	
SDR		X																		
IHB		X								X				X			X			
POR	X					X		X					X	X	X					
SI		X							X	X				X					X	
IDL									X										X	
CI									X		X					X				
CL			X						X		X					X			X	
PSM																	X			X
LAT																	X			X
VF	X		X	X			X		X		X					X			X	
SHY		X								X							X			
ASC															X					
SCB	X		X	X			X									X				
PGC	X				X	X				X				X			X			X
SSM			X										X							
HV		X	X	X			X		X					X						
LPV		X										X			X			X		

sonant. There is absence of *disproportions, which is very seldom seen,* but is again associated with sounder integrations than are attributed to this man.

The armed service adjustment difficulties observed arise less out of the mood swings prominent in the above estimate, than out of an excessive somatotonia with consequent need for action that the war assignment does not sufficiently supply. There is good commissioned rank, and overt adjustment appears to be entirely satisfactory. As in the previous case, one feels that a more varied, stressful environment would be more satisfying to this man; on the other hand, a person with fewer internal stresses would find the by no means sedentary duties of this officer amply sufficient in such respects.

To facilitate comparison, these cases with other random selections for the respective adjustment groups, are herewith presented in Table 20. Comparison of the several trait profiles may be made in such detail as desired. Table 21 *gives the frequency with which each category is represented in* these two subseries, with approximate par for the Study group as a whole (cf. above p. 132).

TABLE 21

	Soundness Traits								
	A	*B*	*C*	*UAF*	*BPH*	*BPL*	*DM*	*VTA*	*BDA*
E	7	3	0	1	8	0	1	6	1
D	2	3	5	1	3	2	2	1	2
Par	3.7	4,5	1,8	1,4	6.0	1.5	1.6	2.0	1.8

	Soundness Traits								
	SVA	*JS*	*SDR*	*IHB*	*POR*	*SI*	*IDL*	*CI*	*CL*
E	2	1	1	2	3	3	1	1	2
D	1	3	0	2	3	2	1	2	3
Par	1,7	1,4	1.4	1,9	3,7	2,5	2,1	.6	2,1

	Soundness Traits									
	PSM	*IAT*	*VF*	*SHY*	*ASC*	*SCB*	*PGC*	*SSM*	*HV*	*LPV*
E	0	0	5	2	0	4	4	1	5	1
D	2	2	3	1	1	1	3	1	1	3
Par	*1.2*	*1.4*	*1,8*	*1,8*	*.9*	*2.1*	*3,8*	*1.7*	*1,6*	*2,2*

In the physiological data as previously cited (pulse, respiration, etc.) no differentiation can be made out. Anthropometric data are quoted in Table 22, the somatotype being on a 5-point scale instead of Sheldon's 7.

TABLE 22

	1-E	*2-E*	*3-E*	*4-E*	*5-E*	*6-E*	*7-E*	*8-E*	*9-E*	*10-E*
Endomorphy	2	2	3	2	3	2	2	3	4	2
Mesomorphy	4	3	5	4	4	4	3	5	5	4
Ectomorphy	4	3	2	4	2	3	5	1	1	2
Disproportions	1	6	2	1	1	0	5	0	0	2
Masculine Component	*S*	*S*	*S*	*S*	*S*	*S*	*S*	*S*	*S*	*S*
	11-D	*12-D*	*13-D*	*14-D*	*15-D*	*16-D*	*17-D*	*18-D*	*19-D*	*20-D*
Endomorphy	3	1	2	1	2	4	4	1	3	2
Mesomorphy	4	5	5	3	4	3	4	3	3	4
Ectomorphy	2	2	2	5	2	1	1	4	3	4
Disproportions	0	1	0	2	1	3	2	3	5	8
Masculine Component	*S*	*S*	*S*	*S*	*S*	*W*	*M*	*S*	*S*	*S*

Beyond such relevance as may attach to a more varied endomorphy, and the presence in the Difficult adjustments of less strong masculine component (2 cases, cf. Seltzer '45), these cases exhibit no separation on this basis, and there is similarly none in the available psychometric data. The highest, substantially the only, predictive quality is shown in rather general estimates of personality attributes, based upon evaluations from the standpoint of clinical psychiatry.

Two other groups inviting consideration for themselves are eight cases already reviewed by Wells ('45) with introductory psychometric reference, and 19 cases who have since received awards for conspicuous service. For nomenclature, they are termed the Mental Measurement and the Award groups. One individual is in both groups.

The Mental Measurement group was thus selected for certain psychometric distinctions, and is otherwise a more varied and complicated series than those with awards. The Mental-Measurement group contains the single participant in the Study, of conscientious objector status. The rest are in the armed forces, one non-com, one counter-intelligence service, the others commissioned.

The decorations received by the Award group comprise the Distinguished Flying Cross, the Air Medal (Oak Leaf Clusters), the Navy and Marine Corps Medal, and the Bronze Star Medal. Identification is a bar to matching a specific citation against a particular series of assigned traits. But, as individuals who have received such awards, they are somewhat comparable among each other, and with the group as a whole.

The cases that constitute the available samples, are naturally too few for any but very general indications. Table 23 gives the number of times each trait was assigned among these two groups of participants.

TABLE 21

	A	*B*	*C*	*UAF*	*BPH*	*BPL*	*DM*	*VTA*	*BDA*	*SVA*
Mental Measurement Group	2	2	3	0	4	3	4	2	0	3
Award Group:										
Actual occurrence	9	7	3	3	12	3	3	7	0	3
Chance expectation	7.0	8.5	3.4	2.7	11.3	2.8	3.4	3.8	3.4	3.6

	JS	*SDR*	*HB*	*POR*	*SI*	*IDL*	*CI*	*CL*	*PSM*	*IAT*
Mental Measurement Group	1	0	2	2	3	5	0	3	0	0
Award Group:										
Actual occurrence	3	3	3	6	6	4	1	6	0	1
Chance expectation	2.6	2.6	3.6	7.0	4.8	4.0	1.2	4.0	2.4	2.7

	PF	*SHY*	*ASC*	*SCB*	*PGC*	*SSM*	*HF*	*LPF*
Mental Measurement Group	6	2	2	2	1	2	1	2
Award Group:								
Actual occurrence	4	2	1	8	7	7	5	3
Chance expectation	3.4	3.5	1.8	4.1	7.3	3.2	2.9	4.2

In the Award group especially, one is impressed with the similarity of their trait configurations to those of the group as a whole, more than with differences. Although no awards actually appear against Bland Affect and Physical Science Motivations, these categories are themselves of too infrequent occurrence for the fact to command attention. It is perhaps noteworthy that awards are not more conspicuously associated with Pragmatic and Practical Organizing.[50] An almost "significant" difference is the excess for Sociable; Bland Affect has the most notable deficiency trend, 0 : 3.4.

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[50] Here one may recall the different types of meritorious conduct for which awards may be made; such as (*a*) single actions of conspicuous valor, (*b*) less dramatic but longer continued achievements of this value, (*c*) actions performed by the concert of a group, all of whom may receive the award. The present citations partake more of the character of the first and third classes; where *POR* would be at no premium, and *PGC* might be at a discount.

The conditions that surround the making of awards are in general such, that while the presence of awards normally attests conspicuously meritorious conduct, their absence in no way denotes the absence of qualities necessary to achieve awards, or that in like circumstances the awards would not be achieved. There is accordingly little reason to anticipate that recipients of awards form a class distinguishable by the present criteria from the generality of those serving satisfactorily in the armed forces. A group of dishonorable discharges on the other hand, would much more probably be differentiated by these means.

Though the cases are much too few to generalize, the Mental Measurement group does have excesses of twice par or more for the *C* soundness grade, and for the traits *BPL, DM, SVA, IDL, VF, SHY, ASC, SSM;* not the most prima facie desirable of trait configurations for rigorous conditions of war, though adequate enough to a settled economy. There is a notable deficiency trend for Pragmatic, and there may have been an unconscious selection for Verbal Facility.

In respect to Excellent, Normal, and Difficult Adjustments, the proportions of the Award group are close to par. Attitude toward the service shows therefore in this material no relation to the achievement of awards.

In view of their distinctive nature, brief characterizations of various members of the two groups are offered. Those in the Mental-Measurement group have been reviewed elsewhere with special psychometric reference (Heath '45, Wells '45); some additional data are of present relevance. Their designations in the Wells paper are cited in parentheses.

21-N; (Participant B). Trait-profile of B—*BPH, DM, IHB, POR, SI, IDL, SHY, ASC, SSM*, Subsequent history favors Shy rather than Asocial, for the inconsistencies between them. Social Science Motivations probably reactive to adolescent socio-economic frustrations. Basic Personality Highly Integrated and Practical Organizing, plus the high intellect, laid the essential foundation for his success. Notably high with verbal multiple choice tests; less adequate with "open end" functions. Uncompleted treadmill run gave shorter time and lower lactate than average; that is, he was disinclined to push himself in that respect. Respiration rate over 1 sigma high, tidal air over 1 sigma low. Exceptionally little demand on the College medical facilities. Body-build shows reduced "masculine component"; somatotype balanced between mesomorphy and ectomorphy, least endomorphy; psychotype indicates temporary shift from cerebrotonia toward somatotonia, viscerotonic components remaining slight. There is reason to think that the Study gave this man reassurance of considerable significance for his later adjustments.

22-N; (Participant C). Trait-profile of C—*BPL, DM, SVA, IHB, SI, IDL, CL, VF, SHY, ASC, LPV.* Pattern while complex, hangs together save for the last two items. In the senses here used, there is probably more of Asocial than of Shy, and Lack of Purpose and Values refers rather to purposes and values usual for this group, than to lack of any such. Note also the incidence of the assigned social traits, with Verbal Facility; chief psychometric feature, the marked verbalization with depression of quantitative and of "open end" verbal functions. Question if Verbal Facility is not largely a function of the special interview situation. Pulse-rate among the highest in the total series, 3 sigma high; basal metabolic rate nearly 1½ sigma high; tidal air 1½ sigma high; sighs per minute about 4 sigma high. A physiological stereotype for Kempf's Anabolic minus. Body-build gives disproportions about 3 sigma high, with marked ectomorphy, minimal meso- and endo-, strong masculine component. Relative discrepancy between psychiatric evaluations and handwriting analysis. Contemporary, though indirect, evidence of satisfactory adjustment in a highly specialized branch of the national service; attesting a more integrated basic personality than seems to have been credited, and an exemplary piece of assignment on the part of those concerned with the personnel practices.

23-N; (Participant G). Trait-profile of C—*BPL, IDL, VF, LPV;* a pattern of itself relatively unfavorable to war service adjustment. Elsewhere noted have been the good psychometric records, especially in open-end function; Verbal Facility is rather an understatement. Relative aptitudes also in manipulative functions; assignment of Physical Science Motivations could probably have been justified. The erratic conduct pattern elsewhere described for this man was hardly reflected at physiological levels, though respiration rate was over a sigma high, and tidal air similarly low. There were no "sighs." In body-build, the next most disproportions (in these groups) to 22-N; somatotype somewhat on the ectomorphic side, least endomorphy. Some case for cerebrotonic dominance could have been made out for undergraduate days; other components more prominent now. The history to date reinforces the favorable impressions concerning his war service, elsewhere related.

In psychiatry, there is a syndrome termed adolescent instability into which this man's sophomore picture would have fitted. The change, as recently observed, has been dramatic; quite apart from the record of combat service, the social impression made is now the best that could be asked. Question of how much of this is maturation, how much a response to the officer training and environment. Credit is given mostly to the latter, with the hope that these gains will carry over into subsequent peace-time career. As compared with the earlier presentation (Wells '45) this is one of the more marked "upsets"; these it may be added, are uniformly in a favorable direction.

Of the four remaining cases, one occurs also in the Award group, and is considered among them. The others include 24-D, whose adjustment grade appears assigned on the basis of unusual choice of war work; the activities carried on have involved considerable discomfort not devoid of danger. Profile of C—*BPL, SVA, IDL, CL, VF;* compare with 23-N. The physiological variations are mentioned elsewhere; somatotype is principally mesomorphic, at great variance with psychotype, which is a mixture of viscero- and cerebrotonia.

25-N (Participant H); trait-profile of A—*BPH, SVA, DM, VTA, IDL, CL, VF, SCB, SSM*. The generally high psychometric accomplishment may be recalled. Somatotype on the mesomorphic side, least endomorphic, psychotype fairly consistent.

26-N (Participant D); trait-profile of A—*BPH, DM, VTA, POR, VF, PGC;* psychometrically noted for relative excellence in projective "open end" response. The most heavily mesomorphic of this sub-group, consistently with psychotype; in general, as favorable a configuration for active war service as has been so far recited.

Although these data, and the prewar histories of the last two cases are wholly consistent with commissioned status, it is present in neither. The dynamic in one of them at least, may be that classical expression by Cato, who would rather that "people should ask why my statue is not put up, than why it is."

Turning now to the Award group, these are the cases of record as of the date involved; but it is improbable that the Study has been informed of all the awards. They are as heterogeneous a group as might be chosen by lot, and understandably so, since the types of circumstances vary so widely in which such awards may be made. Perhaps the most relevant for present purposes is a distinction officially expressed in the terms "Valor" and "Achievement" (cf., note p. 234). Valor here denotes conduct specifically in the presence of the enemy, the critical portion of which may indeed be an affair of seconds. In Achievement, the critical conduct may cover a period of days or months, and need not involve direct enemy contacts; but the two functions must be regarded as continuous.

27-N; trait-profile of C—*UAF, BPL, CL, LPV,* among the less promising for war service of those that have been quoted. Psychometrics nowhere of high grade, usually of low grade for the total group. Outstanding physiological features are a tidal air about 3 sigma high, a number of sighs about 5 sigma high. In body-build ectomorphy is dominant, and disproportions are nearly a sigma high. Clinical notes would bear out the impression that this man if anyone in the total group, entered the armed forces with "two strikes against him." His own report on his duties embodies none of this; is most intelligently expressed, with considerable humor, with comments on the enjoyment of dangerous assignments. Details on the citation are not available, but the nature of the award, and the character of the duties involved point to a citation for Valor, more than for Achievement; so much at least is consistent with the previous estimate of the man, which would have embodied Kempf's "Anabolic minus."

28-E; one of the four Excellent adjustments in the Award group. Trait-profile of A—*BPH, SCB,* favorable enough as far as it goes, but scarcely distinguished. Psychometrics generally superior. All physiological measures noted, within 1 sigma of average. Heavily mesomorphic, least endomorphic. No clear inconsistency with psychotype, might be more cerebrotonia. Follow-up communications to the Study more factual, less colorful than those of 27-N. An entirely favorable war adjustment prognosis would have been justified for this participant, by the above data. The nature of the award implies notably sustained Achievement, also valor in the ordinary sense, with capacity for combat team-work.

29-N; is the individual mentioned above as belonging also to the Mental-measurement group. His claim to distinction there was a high all-round aptitude with interests heavily on the verbal side, although technological aptitudes rated somewhat higher. Trait-profile of A—*BPH, JS, CI, VF, SCB, HV.* Physiology shows a pulse over a sigma slow, and the absence of "sighs"; but the really distinctive feature of the record, inviting consideration from various angles, involves the treadmill run. Here he gave up in a relatively short time, and with much the lowest blood-lactate (i.e., when much the least exhausted) of anyone in the total series. Obviously the use of such a measure as a criterion of "persistence," "guts," etc., is subject to very critical scrutiny. Somatotype is distinguished by heavy endo- and mesomorphy, with greatly reduced ectomorphy; the psychotype would then have suggested even more viscerotonia, but the present picture is in close accord. His own follow-up accounts represent him as a typically "happy warrior"; would credit him with a Vital Affect that did not impress those who observed him here; and with rather less of the Just-So feature than was then ascribed. As pointed out elsewhere, the technological aptitudes have come heavily to the fore. The circumstances of the award, which is among the highest here concerned, denote comparable measures of Achievement and Valor. Post-war career plans are sedentary and ideational.

30-D; Assigned trait-profile of B—*UAF, DM, JS, SI, IDL, CL, VF;* one that might predict a *D* adjustment grade. When previously seen, psychometrics showed a verbal-quantitative balance comparable to 22-N; but with freer intellectual functions, and advantage in manipulative work. Completed the treadmill run, as did seven others in the Award group, a proportion similar to the total samples. Respiration-rate 2 sigma high, tidal air about ½ sigma low. Sighs per minute over 3 sigma high. Somatotype equally distributed, no marked deviation from psychotype. Disproportions about a sigma high.

The Difficult adjustment seems to be the not infrequent one of armed service discipline impinging upon a highly ideational habit of mind, with mood-swings contributing a share. The rating is based on data some time prior to the award, and may not be valid as of the later time. The award is mainly of the achievement type, based on long continued effectiveness, with such critical episodes as are involved in that class of activity; but the Study ratings hardly pick up the qualities that have been displayed.

31-N; Trait-profile of A—*VTA, SCB;* a simple pattern, but of exceptional quality. Psychometrics were undistinguished. Completed the treadmill run on a relatively low lactate, attesting good physical condition. Respiration over a sigma high. Body-build relatively free of disproportions; considerably on the meso- and ectomorphic sides. Upon early contacts, it was remarked of this man that he would make a good Horatio for a Hamlet. Excellent marriage adjustment. The award is a high one, as high as any concerned here; details as to Valor and Achievement are not available. The assignment is perhaps more favorable to the former; his personality lends itself equally to both.

32-D; Trait-profile of B—*UAF, BPL, SVA, POR, IAT, SCB, PGC.* A complication of traits, balance prima facie unfavorable, possibly redeemed by Practical Organizing and Pragmatic. Formal psychometric picture close to average for the group; less command of English than ordinarily seen. Physiology records recumbent pulse nearly 2 sigma high, tidal air about 1½ sigma low. In body-build, disproportions are numerous, equal to 22-N, whom he resembles also in the lowest mesomorphy for those groups. In conformity with the above picture, the judgment of the staff generally gave him a less favorable outlook than the group average.

It is easier to rationalize the adjustment grade on the basis of these expectations, than on the subsequent record. One may suspect some "temperamental" overstatements of discontents. Expressions of good adjustment are not absent. Much improvement since reaching scenes of action. Considerable combat record, culminating in award presumptively on a Valor basis.

33-D; Trait-profile of B—*DM, VTA, SDR, SI, IDL, CL, SCB, HV.* Mood-swings seems again to be the chief factor in the soundness classification; otherwise the pattern is as favorable a one as has been presented. In the presence of a good personal impression, psychometric data pointed singularly otherwise; e.g., "Rorschach color-shock, shading responses and general constriction; excess subjectivity in association responses; thematic content somewhat regressive." Formal tests undistinguished save for good quantitative and manipulative function. Academic accomplishments relatively in excess of endowments (Self-Driving). Somatotype gives considerable mesomorphic excess, ectomorphy as little marked as any. The corresponding psychotype would be among the most generally favorable, and it seemed then to be fairly consistent, despite an early environment disposing much more to Shy or Asocial (or indeed worse, psychoanalytically), than to the Sociable of viscerotonia.

On the other hand the armed service adjustment, which is indeed subjectively "Difficult," carries a more cerebral note. It is not the frustration of a desire for activity, of which there is ample, but an over-intellectualized reaction to it; as well as to other phases of his life. Here one might see reflections of the earlier projective test data. But the difficulty remains implicit, and has been no bar to the award; this appears predominantly an Achievement, denoting sustained combat functions in a group.

In the earlier portions of this chapter, there were brought out some overall relationships between subjective adjustment in the armed forces, and estimates of personality that had been made during underclassman days. There was, for example, something like a 2½ to 1 chance that one who had been assigned the trait of Vital Affect would later feel very well placed in his war duties. If he had been placed in the least admissible of the soundness classes (C), there appeared minimal chance of his feeling this way about his war duties, and something over a 2 to 1 chance that he would feel distinctly uncomfortable in them. But the numbers who receive these trait assignments are comparatively small, and their results do not affect more than a sixth even of this selected group. When one turns to the material just discussed, that is the individual case, one is more impressed by the readiness with which these generalizations are flouted. From the present Award group, one could perversely infer that an army of malcontents would give valiant and devoted service. This much is clear; the happenings in war which are unexpected for the observation in peace ("upsets"), are too serious to be set aside as fortuitous. They point to systematic deficiencies in the characterizations of these men, upon which further attack must be made. The previous chapter discussed the general strategy of so doing.

One further case may be cited in illustration, who had been processed largely in the regular manner (no "trait-profile" however), but who was not considered quite to meet the minimum "basic personality" standards for the group. A recorded résumé of the personality structure recites the expressive movements as stiff, restrained; the mood as unhappy, sad. Under affective functions are the entries, serious, unaggressive. Cognitive functions were found poorly organized, not tending towards logical, rational processes. Social traits were recited as shy, self-conscious, insecure, easily hurt, submissive. Today this man has received an award as distinguished as any in the group, for continued performance mostly in the "Valor" area.

(Incidentally, the somatotype was heavily mesomorphic, which laughs later than anything in the above personality description.) The liabilities seem to have been mainly in the realm of attitude toward self; overt adjustments were good enough. A considerable part of the changes of attitude that made this war record possible appear to have taken place while he was under observation by the Study staff. One would like to feel that these contacts had something to do with the changes; at least the record testifies that considerable effort was made to effect them. But the record leaves us in the dark as to what there was in this man that enabled him so to respond, as we are in the dark about how many like persons would be similarly reconstituted by a like experience.

It would be worth knowing. It throws into relief the absence of neuropsychiatric casualties in this group. To be sure they were selected as presumptively first-rate risks in this respect; it should, however, be clear that the information available for such selection did not always result in such a selection; and did occasionally select an individual who might not have been selected on subsequent knowledge. But not a single individual selected for the Study has been an *NP* casualty.

One of the nineteenth century Popes used to ask each new visitor how long he had been in Rome. If the answer was 48 hours, he would say, "Then of course you've seen everything" (Personality Inventory). If it was two years, he would say, "And now you are beginning to know Rome" (Rorschach Test). If it was 20 years, "Ah, now you know that you will never know Rome" (Psychoanalysis). The cases above recounted entitle this research group to some such feeling about the more cursory methods of personality evaluation. As to the methods of this Study, they could hardly be called cursory, but they are as yet clearly incomplete. One aspect of this incompleteness, and the one easiest to remedy, was discussed in the previous chapter. The other and more difficult aspect, starts with the issue of trait-specificity. Is one "shy" on the football field or at a tea-table; or at both, or neither? A tea-table is not further from a football field than is a liberal arts college from Okinawa. Not only were these men four to six years younger when we first observed them, but they were responding to an extremely different environment. There is the best of reasons to suppose that similar observations under war conditions would elicit very different trait-profiles out of a very different trait-series from what is here presented. The local environment and the previous history of these men were simply not capable of revealing large sectors of their personalities, to an observer or to the men themselves. One may hope it has been a pardonable over-simplification to speak of Basic Personality in terms of "how much can he take?" From war records if from anywhere one should learn that the question is, what stresses and how many kinds of stresses can he take? And also that unsuccess in an outwardly easier environment does not necessarily mean unsuccess in a harder if different one. Of the present group, the least integrated in college have in war their chance along with the best. As each of Napoleon's troopers carried a marshal's baton in his knapsack, so the good GI might be said to carry the Medal of Honor in his heart. It was more than suspected in the first world war, and is abundantly demonstrated in the second, that dynamic factors none too well adjusted to peace-time life, can motivate accomplishments in war. The sound personality is unlikely to give way; but some unsound ones are firmly welded in the "fiery trials."

VIII. CONCLUDING REMARKS

The Grant Study group consisted of individuals who were making more than ordinarily good adjustments to their fellows, and have since shown themselves capable of good adjustments in very difficult circumstances. Objections have been raised to the "small size of the sample"; but this needs to be qualified. The sample is not small for clarifying the problem in its present "pilot" phase; this depends less on large samples than on insighted investigation, and a sample of the present size is amply large to serve as a staging area for another advance. Such criticism is better directed at the narrowness of the sample than its size; one consisting of persons far from normal in a statistical sense, highly specialized intellectually and economically. It is not an answer that this is a sample from which "leaders" come; effective, not to say benign leadership is achieved too often upon no such basis. Perspective upon other groups must be gained (as certain accessory studies in the present setting have amply borne out), and without forgetting that there is an altogether different sex with no small rôle in the social order.

The implicit function, not to say aim of research like the present, is still to learn more about what kinds of persons it takes to make up a healthy society, and how such persons might be born and reared. It is to be supposed that a culture based upon such individuals would by our standards be a healthier culture than one embodying large numbers of individuals liable to less adjustive behavior. It is this wide variation in behavior patterns and capacities that makes the problem of civilization, rather than to find some particular set of social institutions that might be the most suitable for humanity, or a given regional segment of it.[51] No form of social integration can succeed if too many of those in it are stupid, selfish, or corrupt. Any form of social organization will give a Utopia, given properly organized personalities to live by it. This is a point that writers of Utopias are apt to completely miss; the reason being that a Utopia is a projection of the personality that, quite literally, "projects" it; and simply mirrors the kind of society in which the literary segment of this personality would feel most at home.

It should have long been clear that the Outstanding Traits of this presentation are as its title specifies: the traits which were outstanding in a specially selected group of college students. For other groups, as for example in a group of merchandisers subsequently observed, some of these traits have to be subtracted and others added. The material just preceding illustrates how such trait pictures also change with the environment, as they do with maturation. The most valid of personality descriptions like these, has a validity limited largely to the circumstances that have surrounded the person; and begins to lose this validity as these circumstances are altered. Normal human circumstances are enough alike, that the understanding of human nature has for some time been at a practically workable stage. How fragmentary it still can be, has been perhaps sufficiently illustrated. The emerging problem is to understand what attributes are, by comparison, basic. The nearest approach to this that has been made, is possibly Kempf's Anabolic and Catabolic balance, discussed in the previous chapter. One could wish that the Sheldon-Stevens psychotype were at least equally basic, but this is not claimed by its authors, and under war plus maturation, there have seemed to be such shifts in this material also. The Anabolic-Catabolic balance might be subject to similar shifts; adequate scrutiny has not been practicable. Certain intellectual functions have also been assigned this basic character; and the degree of plasticity in the human organism, of which the *IQ* has been one expression, is perhaps as fundamental as any personality attribute. The problem here as elsewhere is to get suitable measures, e.g., no technique of "Intelligence Quotient" has proved sufficiently culture-free (cf. the "Iowa controversy"; but also Cattell '44). That particular difficulty may be less serious in the areas dealt with by Kempf, and by Sheldon and Stevens. Thus the immediate stability of autonomic functions is indeed subject to environment, but how well these functions are able to support different intensities and varieties of stress, should have a very basic position among those attributes capable of experimental observation. As in the case of Intelligence, the problem has been over-simplified. Many of us have learned to separate verbal functions from non-verbal, and even verbal from quantitative, but it proves very difficult to get recognition, even in clinical psychometrics, of such obviously relevant variables as Thorndike's speed, range, and altitude. Similarly one needs to define more precisely what autonomic functions are under consideration; establish qualitative variations in stability, and test the validity of a generalized concept of autonomic stability, not less successfully than has been done in the case of Intelligence.

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[51] "The scheme of elevating the social organism as a whole without improving the individuals who compose it has only the results of degrading the individuals still further . . ." (Inge '23, p. 242).

The clinical fate of the Intelligence concept (cf. Thurstone '45) can be a warning of how promptly a formalized attempt at personality description, charted by abstract trait-names, loses itself in the labyrinth of trait-specificity. Probably in no other area of psychology has scientific advance been so difficult; so that while some of us would restrict the term psychology to this very field of the organism as a whole, others would altogether deny it the use of the term, and have suggested others, of which characterology is perhaps the most nearly respectable.

The immediate and more explicit purpose in a research of this kind is to systematize and actually objectify the understanding of human personalities. Neither the necessity nor the adequacy of this means to serve this end, are to be accepted uncritically. Genius goes far without it; neither Shakespeare nor Balzac had access to the work of Binet or Rorschach or even Freud; no competent novelist or poet has need of them. (Psychoanalysis indeed, is by no means unready to accept from literary sources, confirmation of its own views.) If there were no concern for implementation, one could afford to leave this whole topic to the domain of literature. In the implementation of such insights within the realm of human relations, one meets the need of more scientific approach. (Cf. the critical comments by Cattell in *Character and Personality* ('44) especially near the close of the paper.)

Accomplishment in this field, as in most others, is through some blend of talent, experience, and technology. Where talent (or genius) is predominant, one is in the stage of art (cf. R. L. Jenkins '45). Where talent can and must be reinforced by systematized experience, one crosses the borders of science. In so far as experience, particularly others' experience, can replace the rôle of talent, one deals with a profession grading into technique.

What is the status, along this gradient, of "characterology"? In the field of Intelligence measurements, it has advanced the furthest, though somewhat precariously, towards the technician level. In the organismic area also, techniques and technicians are not easily numbered, but they depend for validities upon considerably deeper insights than are implicit in the methods they use. At best these are devices aiming well short of perfection, and rather at a point of diminishing returns for some exigent practical situation, as the Cornell Selectee Index, or the Kuder interest profile.

That is to say, technology—systematized and transmissible experience—is now sufficiently valid to aid and supplement the best efforts of talent and personal experience; but not to govern them, let alone replace them. So long as this is so, the understanding of the personality for its own sake, or in any counseling, guidance, or therapeutic function, remains in essence a clinical art. Nor is it likely to be otherwise in the foreseeable future; the limits to which systematic comparison can be carried, leave if indeed they do not open, large and essential areas in which personalities are simply not commensurable.

These principles have a wide application; but the military parallel has an immediate pertinence. No human pursuit has a technology so complicated and objective, as modern warfare. Warfare is a technology because of the great body of systematic experience to be brought to bear on it; warfare is an art because every combat and logistic situation brings novel combinations which must be solved by a resynthesis of the commander's total powers. This is why the general is properly so called; he is the one on whom the most demand is made to "generalize."[52] The understanding of personality has been included in the art of war, from the time of Polybius at least. Its technology has recently grown at a rapid rate; but these increases of understanding should also give more critical insights about what is not understood. Armor and physico-chemical warfare in the one sphere, the constitutional type and the projective test in the other, are such as challenge talent, rather than replace it. The able critique by John G. Jenkins ('46) reflects a growing consciousness in psychology, of penalties that "objectivity" exacts in irrelevance.

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[52] It is worth noting that "marshal" has acquired similar connotations as a verb, though its etymology is quite different.

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